

E. STEWART REUSCHLEIN

TECHNICAL DATA

 **Armstrong FLOORS**

WALLS AND COUNTER TOPS

1957

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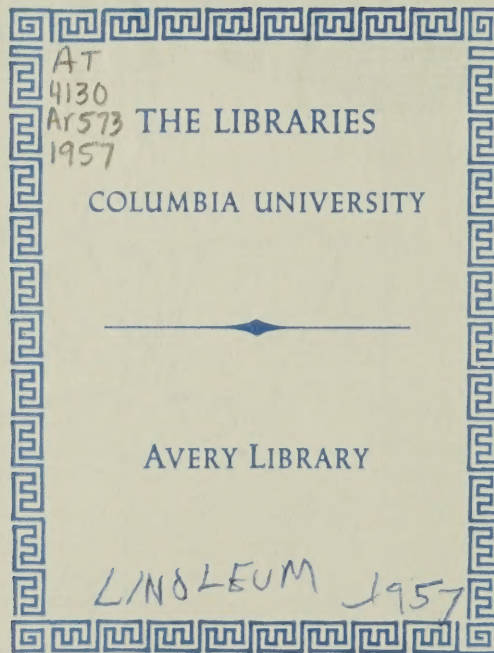
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We acknowledge the assistance of the American Institute of Architects in editing the subject matter and form of presentation of this manual.

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Colors and Designs

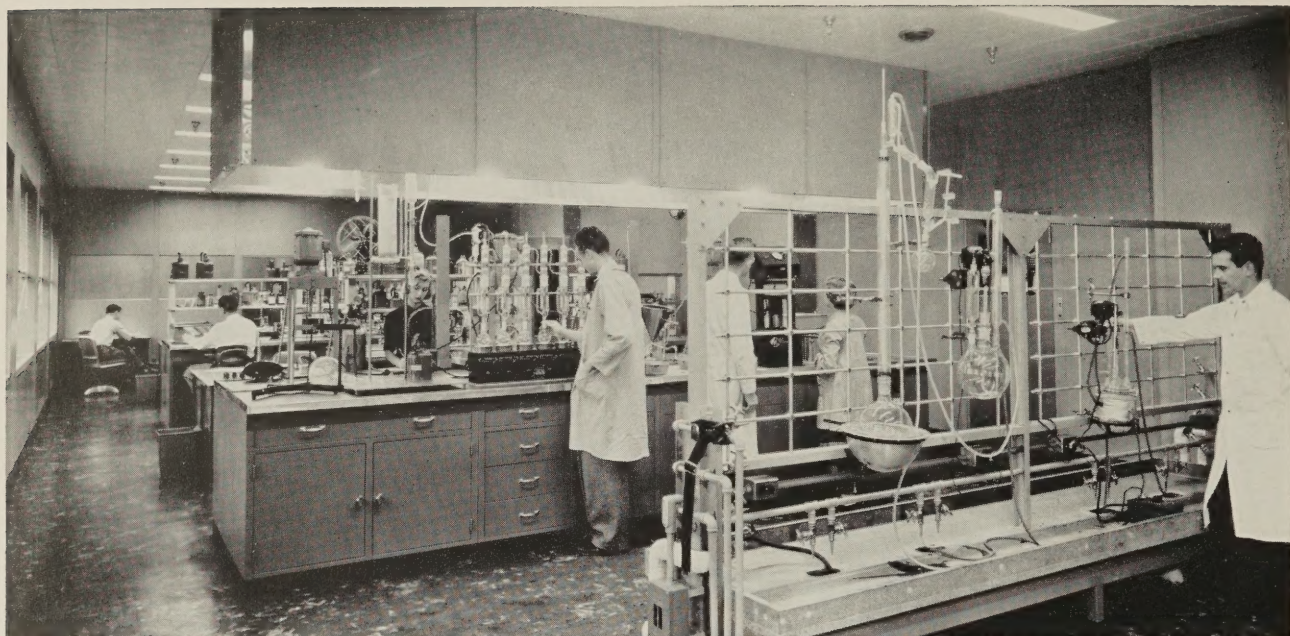
Linoleum	50	Resilient tiles	116
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Trade-Marks

Armofelt, Corlex, Corkstyle, Craftline, Cushion-Eze, Decoray, Decoresq, Estate, Excelon, Granette, Hydrocord, Imperial, Linogloss, Linostrap, Linotile, Marbelle, Newray, Royelle, Spatter, Suburban, Temboard, Textelle are trade-marks of the Armstrong Cork Company, Lancaster, Pennsylvania.

SECTION ONE

1957 TECHNICAL
DATA



Scientific research has created . . .

New developments in resilient floors

The variety of resilient floors offered for selection today is the result of the needs of modern society and changing trends in building. Factors such as concrete subfloors in direct contact with the ground, radiant heating, styling, comfort and quietness underfoot, the amount of money budgeted for floors—all have an important bearing on the flooring selection. Since these conditions and requirements vary widely from project to project, there is a need for different types of floors with specific characteristics to meet individual circumstances.

Today's Floors Are "Engineered"

As a result of such widely varied requirements, modern floors must be engineered to meet these conditions. Working hand in hand with architects, builders and designers, the staff of the Armstrong Research and Development Center helps solve new and complex flooring problems. The joint efforts of these groups have been responsible for many new types of resilient floors as well as improvements in existing materials.

The primary objective of resilient floor research and engineering is to develop maximum service characteristics at minimum costs. The ultimate goal is a universal flooring material combining all physical characteristics for installation over any and all types of subfloors.

Until such a flooring millenium is achieved, research, science and engineering will continue to develop new and different materials to meet the needs as they arise.

The research and engineering of resilient floors pass through four phases of development—basic research, applied research, pilot plant, and physical test.

Basic Research

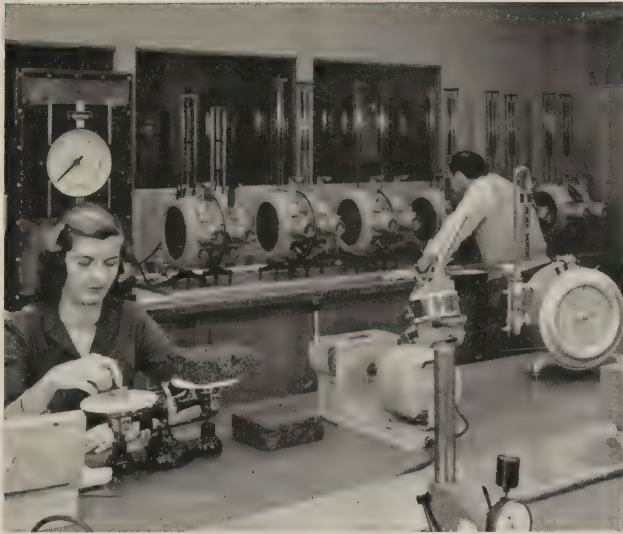
Basic research, employing both chemistry and physics, involves independent work on basic problems such as molecular structure, chemical reactions, and fundamental physical characteristics. Using all the tools of modern science, new flooring products are developed and their various properties fully evaluated long before actual factory production can be considered.

Applied Research

Not all of the discoveries brought about through basic research can be applied and none can be immediately utilized. Thus, the next step in the development of new products and processes is undertaken through applied research where the results of the basic work are submitted to further experimentation.

At the laboratory bench, many combinations of new materials and methods must be tried and compared with existing ones. Here, again, only the most promising new formulations and procedures survive. Those that show further potential move on to the pilot plant phase.

The pilot plant facilities of the Armstrong Research and Development Center duplicate actual factory equipment in all respects except size. Operating on a smaller scale,



Applied research reveals the characteristics and performance of new products long before they are produced for marketing.

the machines in the pilot plant provide opportunity to test new processes and produce specimen pieces of the finished product without interfering with production lines. In addition, pilot plant machinery and equipment can be experimented with in a manner not practical on the actual production lines.

Physical Test, the Proving Ground

The physical test phase of research is the proving ground where new products are evaluated and old ones are checked to maintain quality standards. Equipped with scientific testing devices that reproduce every type of installation condition and abuse, performances can be determined under normal or accelerated and intensified conditions. Sensitive instruments measure and record critical factors in performance like indentation resistance,



A foam backing, trade-marked Cushion-Eze, is a recent development of Armstrong research. It is a new concept of under-foot comfort and quietness in sheet plastic and linoleum floors.

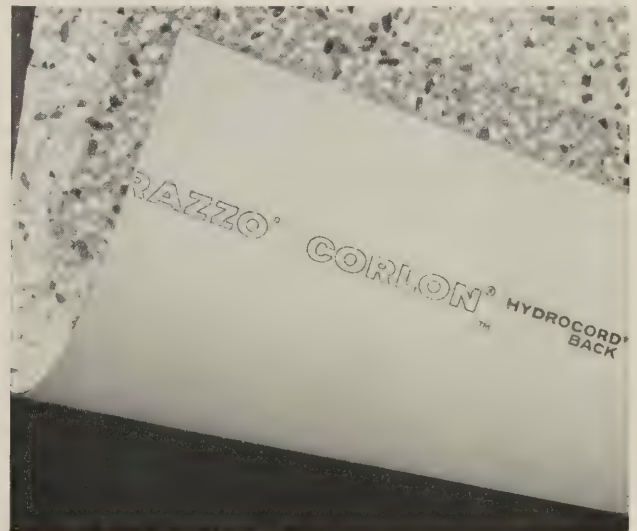


A typical physical test is this sunlight exposure rack where the color retention values of various pigments can be checked.

flexibility, thermal conductivity, and tensile strength.

Armstrong research extends far beyond the testing of just the flooring materials themselves. It includes subfloors, underlayments, adhesives, and maintenance. Field testing under actual service conditions also is an important phase of Armstrong research. Test floors are installed in all sections of the country, under various types of usage. Studies of these installations are compared with results obtained in the laboratory.

The technical information in this book is the result of the experience gained through scientific experimentation and testing conducted by the Armstrong Research and Development Center. All data and recommendations contained in the following pages have been reviewed and brought up to date as of February 15, 1957.



Hydrocord is another new backing created by Armstrong. It has resistance to alkaline moisture and now permits the installation of plastic sheet flooring on grade-level concrete slabs.

ARMSTRONG SERVICES TO ARCHITECTS



Armstrong Cork Company makes all types of resilient floors for all types of interiors. Almost any flooring requirement can be met with one or more of the floors in the Armstrong Line. As a result, we can offer unbiased recommendations on any flooring problem. Our main interest is, of course, to aid you in making a sound flooring selection. For complete information or recommendations on specific job requirements, contact the nearest Armstrong District Office listed below or write to Armstrong Cork Company, Floor Division, Lancaster, Pa.

Architectural-Builder Consultants, a special group of Armstrong representatives, have been assigned the exclusive responsibility of working directly with architects, decorators and interior designers on flooring problems. Armstrong Sales Representatives, an organization of over 125 men, also devote much of their time to such consultations. Together, these two groups represent an exceptional fund of experience and training in resilient flooring. Architectural-Builder Consultants and Armstrong Sales Representatives are located throughout the country and will gladly consult on any flooring problem and make specific recommendations for individual jobs.

Complete Specifications on the installation of any Armstrong Floor, Wall and Counter-Top Materials are available upon request. For abridged specifications, see Section One of this book, pages 29 through 33.

Armstrong Bureau of Interior Decoration, staffed with experienced interior designers, will, without obligation, suggest to you or your color consultant designs for floors, walls, and ceilings with complete room color schemes if desired.

ARMSTRONG OFFICES

ATLANTA 8	727 W. Peachtree Street, N.E.	KANSAS CITY 8	500 West 26th Street
BALTIMORE 2	114 South Street	LOS ANGELES 15	719 Bendix Bldg.
BOSTON 16	Publisher's Bldg., 131 Clarendon St.	MINNEAPOLIS 6	4539 Hiawatha Avenue
BUFFALO 23	1674 Kenmore Avenue	NEW ORLEANS 25	7010 Washington Avenue
CHICAGO 54	13-136 The Merchandise Mart	NEW YORK 16	295 Fifth Avenue
CINCINNATI 37	1057 Meta Drive	PHILADELPHIA 2	Robinson Bldg., 15th and Chestnut Sts.
CLEVELAND 14	2975 Superior Avenue	PITTSBURGH 22	24th Street and Allegheny River
DALLAS 7	1824 N. Industrial Blvd.	ST. LOUIS 10	1919 Hampton Avenue
DENVER 4	35 West Fifth Avenue	SAN FRANCISCO 3	Western Merchandise Mart
DETROIT 26	Free Press Bldg., 321 Lafayette Ave., West	SEATTLE 1	803 Terminal Sales Bldg., 1932 First Ave.
HIGH POINT, N. C.	Southern Furniture Exposition Bldg.	CANADA	6911 Decarie Blvd., Montreal 29, Quebec



FLOOR DIVISION LANCASTER, PA.

Which floor goes where?

With the large variety of resilient flooring materials now available, some difficulty may be experienced in choosing the right resilient floor for installation over a particular type of subfloor. There are relatively few cases in which only one material will do a specific job. However, consideration of such factors as moisture and service conditions can help guide the selection of a resilient floor—no matter what subfloor is involved.

Moisture Conditions

There are three main types of moisture conditions which should be taken into account in choosing a resilient floor.

Concrete subfloors. The moisture content of concrete suspended above grade, on grade, or below grade may seriously affect resilient flooring materials. The installation of resilient floors over concrete is more fully discussed on pages 11, 12, and 13.

Wood subfloors. Wood subfloors constructed over sleepers on grade-level and below-grade concrete slabs are susceptible to moisture. Wherever a wood subfloor is constructed over a crawl space, there also is danger of moisture damage and consequent warpage to the subfloor, resulting in harm to the resilient floor itself. Crawl spaces should therefore be at least 18" high, and cross ventilated. Any of the various Armstrong resilient floors may be installed over wood subfloors in good condition if adequately suspended and ventilated.

Surface moisture. Around laundry equipment, bathroom fixtures, and in other areas where excessive water is likely to be spilled on the floor, moisture may find its way through the seams in the floor and attack the adhesive. In the case of Cork Tile, excessive surface moisture may damage the floor itself. Where surface moisture is a problem, the floors recommended for on-grade installation—Excelon Tile, Asphalt Tile, Rubber Tile, Custom Corlon Tile, and Sheet Corlon with Hydrocord Back—will give satisfactory service when installed with waterproof adhesives. On suspended floors, sheet flooring materials—Linoleum and Corlon—are least susceptible to the seepage of surface moisture because they can be installed with minimum seams.

Service Conditions

Resilient flooring materials should always be selected with service conditions in mind, since the wear a floor

receives has great bearing on how long it will retain its utility and beauty. Just as service conditions may range from light wear to constant foot traffic and frequent cleaning—so do resilient flooring products vary in their abilities to withstand harsh treatment.

Light or heavy traffic. In residential installations, wear is not usually an important factor in the choice of a resilient flooring material. In most cases, these floors will be replaced for decorative reasons long before they wear out. Here, most resilient flooring products are satisfactory from the standpoint of wear, and the final choice is often based on price, preference for a design or pattern, or other considerations such as grease resistance. In commercial installations, on the other hand, excessively heavy traffic sometimes makes wear a limiting factor in flooring life. Where this situation exists, the use of heavier gauge products is indicated. Materials that provide the necessary superior wearing characteristics include Armstrong Linotile, Heavy Gauge Linoleum, the 1/8" gauge of Rubber Tile, Custom Corlon Tile, Asphalt Tile, Excelon Tile, and Cork Tile. For a more complete discussion of resilient flooring gauges, see pages 24 and 25.

Exposure to strong sunlight. The increasing use of glass curtain walls in commercial structures and the enlargement of window areas in homes represent a severe test of any flooring material. Exposure to strong sunlight may affect the performance and appearance of some types of resilient floors by causing fading, shrinking, brittleness or chalking. Resilient floors in sheet form (both Armstrong Linoleum and Corlon) and Linotile are considered most resistant to such deterioration.

Pigments are, of course, the limiting factor in the fade-resistant properties of most resilient flooring materials, but great improvement in color stability has been made in recent years, especially when reds and blues are concerned. Neutral colors such as grays and tans show the best light resistance. Pastel tones, especially yellows, reds, and pinks, give the poorest performance in retaining their colorings under prolonged exposure to the actinic rays of sunlight. Cork Tile has the same tendency as natural wood to fade under strong sunlight.

Maintenance. This is often an important factor in the selection of resilient floors for commercial buildings.

Maintenance requirements for all types of resilient floors under various service conditions are discussed fully on pages 44 and 45.

Other Factors in the Choice of Resilient Floors

Apart from decorative effects, patterns, and colors, which are largely a matter of individual choice, there are a number of other factors to be considered in selecting a resilient flooring material. Some of the more important are underfoot comfort, noise or impact, electrical conductivity of the floor, ease of repairing damage, and the effect of seams.

Resilience and noise on impact. These considerations are discussed in detail on pages 18 and 19.

Electrical conductivity. In buildings where explosives or combustible materials are handled, it is desirable to have a floor capable of conducting away accumulated static charges. At the same time, this floor should be non-sparking on impact. A special Conductive Asphalt Tile has been developed by Armstrong for this type of

installation. This floor has a heavy asphalt base, and its resins and fillers are specially formulated to produce a non-sparking material with exceptionally high electrical conductivity. This type of resilient floor is not recommended for use in hospital operating rooms or paint spray rooms.

Repairing damage. Occasionally, an accident may damage a portion of floor so seriously that replacement becomes necessary. All resilient floors are more easily repaired than marble, terrazzo, or concrete. If the damaged area is small, replacement is easier and less expensive with a tile floor than with sheet goods. However, cuts and tears in Armstrong Corlon (sheet form) can be readily heat-sealed with metal foil and a soldering iron. Linoleum can be patched with lacquer and linoleum mix.

Seams. The small number of seams and joints in sheet flooring allows few places for accumulations of dirt or corrosive materials. Armstrong Resilient Tile Floors are also easy to maintain. Precision factory cutting of these tiles assures tight joints and close-fitting edges over the entire floor.

Suspended Floors

- | | |
|-----------------------------------|--|
| Cork Tile | Linoleum (Burlap, Felt, or Cushion-Eze Back) |
| Custom Vinyl | Linoleum Tile |
| Cork Tile | Linotile |
| Corlon (Felt or Cushion-Eze Back) | Rubber Tile |
| Custom Corlon Tile | Asphalt Tile |
| Excelon Tile | Conductive Asphalt Tile |

Table showing which resilient floors are suitable for installation over various types of subfloors.

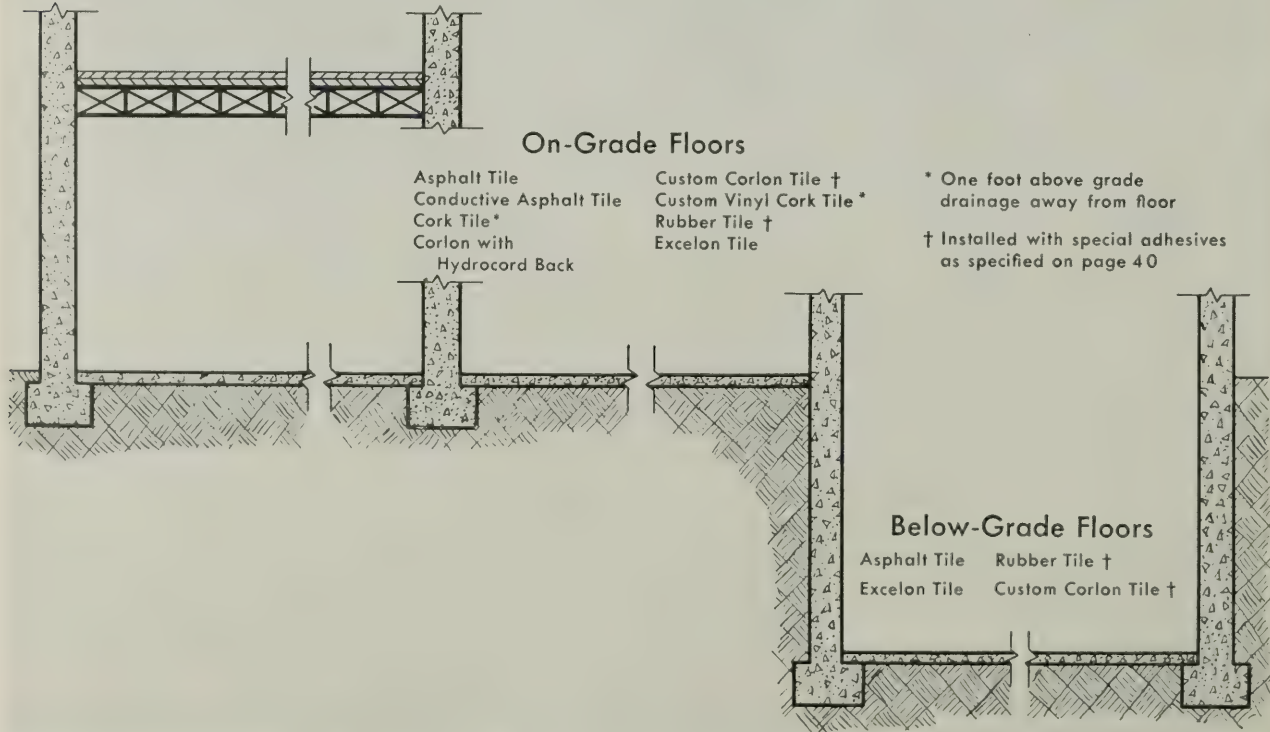
On-Grade Floors

- | | |
|----------------------------|--------------------------|
| Asphalt Tile | Custom Corlon Tile † |
| Conductive Asphalt Tile | Custom Vinyl Cork Tile * |
| Cork Tile * | Rubber Tile † |
| Corlon with Hydrocord Back | Excelon Tile |

* One foot above grade
drainage away from floor
† Installed with special adhesives
as specified on page 40

Below-Grade Floors

- | | |
|--------------|----------------------|
| Asphalt Tile | Rubber Tile † |
| Excelon Tile | Custom Corlon Tile † |



Which resilient floor over concrete?

There are at least two reasons why it is now more important than ever to be aware of the particular problems involved in the use of resilient floors for installation over concrete. First, the use of concrete in direct contact with the ground has vastly increased during the past decade. Second, the resilient flooring industry has developed new types of floors and improved others, especially to provide resistance against the harmful effects of alkaline moisture encountered in on- and below-grade concrete subfloors. This alkaline moisture problem is caused by moisture from the earth working its way up through the concrete. As the moisture rises, it combines with the alkaline salts in the concrete. The result is an alkaline moisture surface condition that can deteriorate the resilient floor or the adhesive, unless proper selection is made. The use of lightweight aggregates in any concrete subfloor—suspended, on- or below-grade—brings up a number of special problems which should be discussed specifically with the local Armstrong representative.

Adequate Drying Time

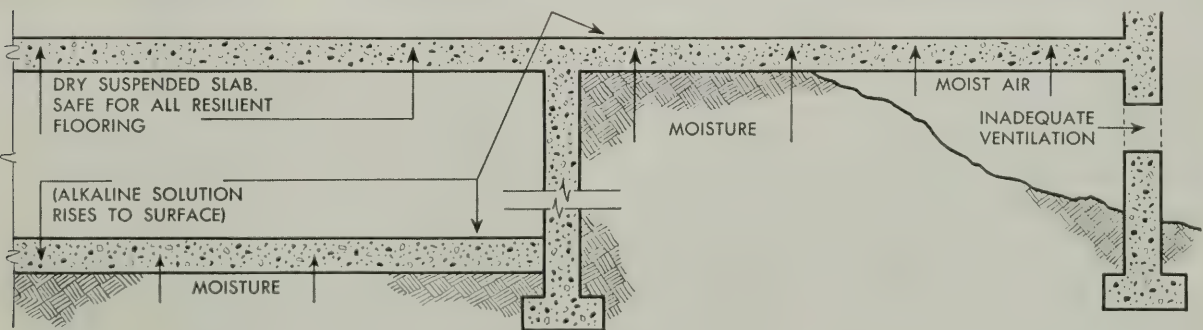
Wherever possible, concrete should be permitted to dry thoroughly for several months. This is especially important when floors susceptible to alkaline moisture are to be installed. In all cases, the concrete subfloor should be

tested for moisture before resilient flooring is installed. When suspended concrete is known to be completely dry, any resilient floor may be installed satisfactorily.

Since the degree of moisture present is the main factor determining the seriousness of the alkaline condition, resilient floors which are suitable for installation over concrete in contact with the ground are usually divided into two categories—those which may safely be installed for use on grade or below grade, and those which are suitable for use on grade but not below grade. As is to be expected, the “moisture problem” in basements is more severe than that encountered at grade level.

On grade or below grade. For years, asphalt tile was the only resilient flooring which could safely be installed in basements, and it still remains an excellent low-cost floor for this purpose. Today, Armstrong Excelon Tile is also recommended for basement and on-grade floors, as are Armstrong Rubber Tile and Custom Corlon Tile when installed with adhesives as specified on page 40.

On grade. Armstrong Rubber Tile and Custom Corlon Tile, as well as Sheet Corlon with Hydrocord Back, may be installed under normal on-grade conditions over cured concrete with special adhesives. See Table of Recommended Adhesives, page 40.



This drawing shows how moisture from the ground or from an inadequately ventilated air space below penetrates the concrete slab, bringing alkali to the surface in solution. This solution attacks the oil binders of most resilient flooring materials, causing a chemical change. Linoleum and other resilient flooring materials may be used on dry suspended floors. For grade-level and below-grade floors which contain ground moisture, Asphalt Tile, Excelon Tile, Rubber Tile, and Custom Corlon Tile may be installed. These resilient flooring materials are not harmed by alkaline moisture. In addition, sheet Corlon with Hydrocord Back may now be installed over on-grade concrete subfloors. (See paragraphs “On grade,” above and top of page 12, for special Cork Tile installation conditions.)

Many years of laboratory tests, and trials under actual conditions, have proved that such installations will give satisfactory service for the normal lifetime of the floor. Armstrong Cork Tile may be installed over concrete in contact with the ground with No. S-214 Waterproof Cement (See Table, page 40.) if the surface of the slab is at least 12 inches above grade, the ground slopes away from the building, and the slab is well cured and visibly dry.

Wet Floor May Appear Dry

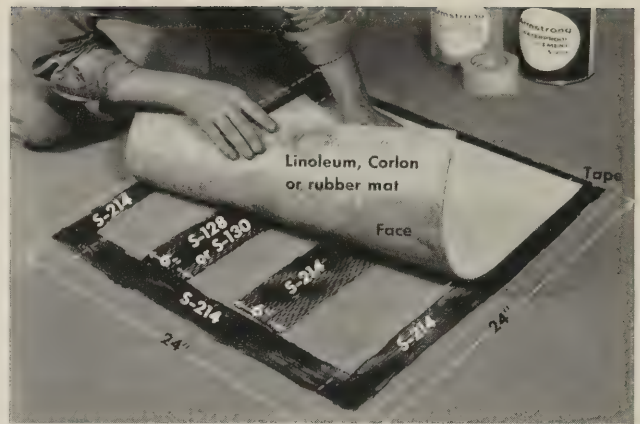
It is never safe to assume that a concrete slab will always be dry because it has appeared dry for several years. Rapid evaporation at the surface will make a concrete floor appear free from moisture but when a resilient flooring is cemented to this surface, evaporation is prevented or slowed down and the alkaline solution collects under the flooring material.

There have been many attempts to find ways to waterproof concrete slabs to make on- and below-grade use of all types of flooring materials possible. To date, the only method which has been proved to work satisfactorily is the membrane method. Even when resilient floorings approved for use without membraning are selected, it is advantageous to include a membrane in slab floors when possible. Individual recommendations for membraning procedures should be discussed with the local Armstrong representative. In any case, it is highly desirable when concrete slabs are in direct contact with the ground, that the slab be placed on a well-drained base.

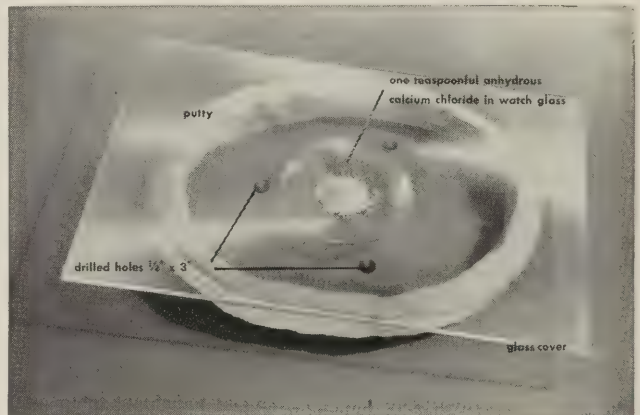
Regional Conditions

While alkali and moisture present difficulties everywhere, there are a few sections of the country where the aggregates used in compounding concrete contain excessive amounts of alkaline salts. As the subsoil moisture seeps through such concrete subfloors, it dissolves the alkaline salts within the concrete, carrying them to the surface. These salts accumulate underneath resilient flooring or are deposited on the edges of tile as the moisture evaporates. These alkaline deposits build up over a period of time and may gradually force the tiles up from the subfloor or permanently adhere to the surface edges of the tile unless removed promptly. Generally this condition is of a temporary nature and will gradually be eliminated as the continuous passage of moisture dissipates the alkaline salts within the subfloor. An experienced local floor contractor is the best source of useful advice where these special circumstances are encountered.

Another important factor in considering the correct choice of a resilient tile for installation over concrete is the alkali resistance of the pigments used in its manufacture. Armstrong Laboratories have worked on this problem for years and have developed specifications for alkali-resistant pigments for all the flooring materials recommended for use over concrete in direct contact with the ground. These pigments prevent fading and "color bleeding" of the tile.

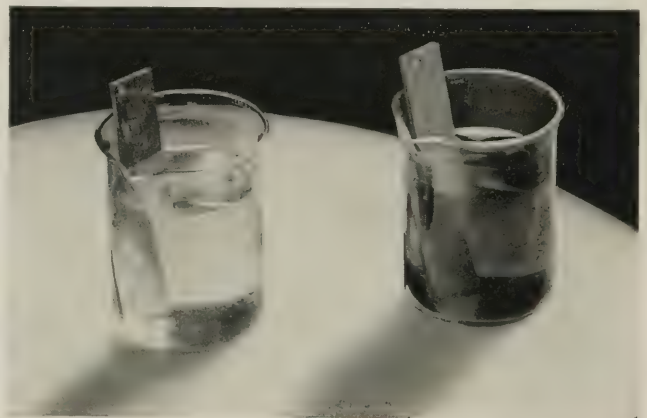


This test shows whether cork, rubber, or Custom Corlon Tile can be used on grade and whether rubber or Custom Corlon Tile can be laid below grade. After 72 hours, the S-128/S-130 should be partially set up and the S-214 well set up or dry.



This moisture test should always be made on newly poured suspended concrete floors of all types before the installation of materials that are affected by alkaline solutions. If floor is too moist, calcium chloride is partly dissolved in 24 hours.

Immersion for 2 hours in a 2% solution of sodium hydroxide determines color permanency of pigments in tiles specified for use over below-grade concrete. Beaker at right shows bleeding of colors from pigments that are not alkali resistant.



Hydraulic tilt- and lift-slab construction

Recent improvements in hydraulic tilt- and lift-slab construction techniques have resulted in their increasing popularity with the building trades. However, with the new techniques have come new problems in resilient floor and wall covering installation.

In the lift-slab method of subfloor construction, the concrete for each suspended floor is poured and allowed to harden at ground level before the slab is hydraulically lifted into place to form the upper floor. Before the concrete can be poured, however, a special oily or resinous "breaker" compound is applied to the top surface of each slab to prevent its sticking to the slab above it.

While the "breaker" does prevent the slabs from sticking together, it also prevents resilient flooring materials from adhering satisfactorily to the slab. In most cases, the waxy film of the breaker coating keeps the flooring adhesive from making a firm bond to the slab—whether on or above grade.

The problem may not be acute in all installations. Job conditions vary. The amount and type of "breaker" used on a slab are just two of the variable factors. In most cases, little trouble has been encountered with the installation of Armstrong Asphalt Tile and Armstrong Excelon Tile on lift slabs. Actual job experience has also indicated that breaking compounds tend to deteriorate in a short time, reducing the difficulty. Nevertheless, the only way to insure a permanent bond for all types of resilient flooring is to remove the waxy film.

Three removal methods can be used. One method is sanding. This is seldom completely successful because it will not get at film that has soaked into the concrete.

Another method is sandblasting. This will remove the film, but it may also make the concrete extremely rough and may even pit it if the air pressure is too great or the

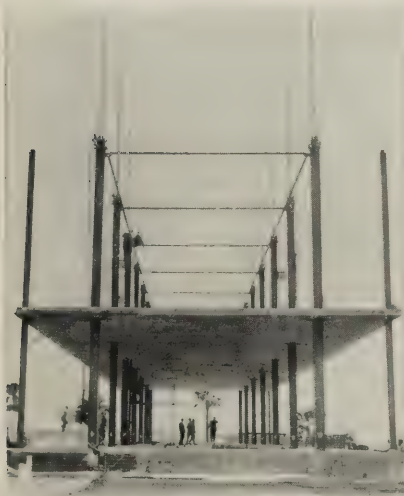
concrete is too soft and porous.

The best method of removal is grinding the slab with a concrete or terrazzo grinder. Grinding will remove film both on the surface and in the surface pores, and it will cut a new surface on the concrete. In addition, grinding insures a smooth, level floor.

A simple "mat test" should be employed after grinding to check its effectiveness. Lay several test pieces of the resilient flooring to be installed on the concrete bonding them to the slab with the adhesive that will be used when actual installation takes place. After a period of from ten to fourteen days, check the test installation and observe the strength of the bond. If it is still strong, the slab is ready for resilient flooring installations.

Lightweight Aggregates

Another problem that may be encountered where lightweight aggregate concrete is used in lift-slab or conventional construction is the tendency of some extremely porous concrete mixes to retain residual moisture longer than the normal several months' drying time. When this condition exists, alkaline moisture may collect and rise to the surface of a suspended concrete slab subfloor to create the same moisture conditions found in concrete which is in direct contact with the ground. Whether or not such a condition exists can be determined by employing the moisture tests outlined on page 12. If the concrete subfloor is found to contain residual moisture, the use of resilient flooring materials should be questioned. Only those flooring materials and adhesives with the ability to withstand the effects of alkaline moisture should be considered. In all cases, a 1" layer of regular concrete should be laid over the lightweight aggregate before resilient flooring installation takes place.

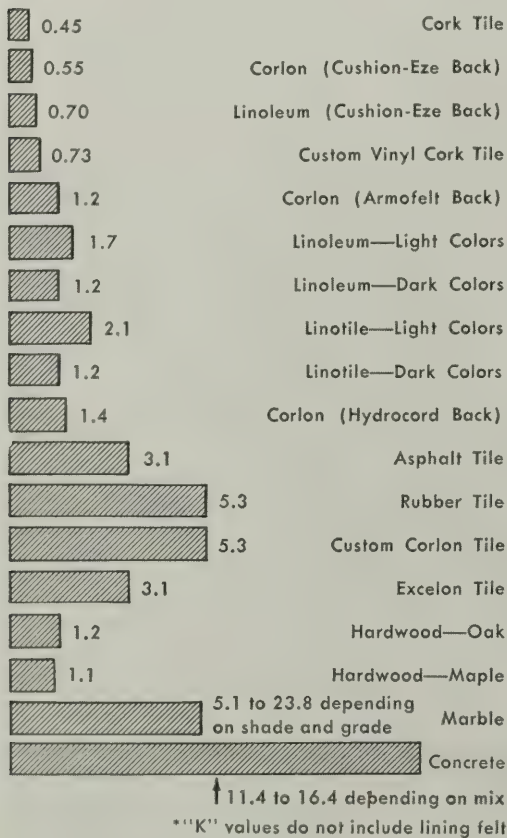


In hydraulic lift-slab construction, concrete slabs are poured directly on top of each other at ground level. The slabs are coated with a "breaker" compound that prevents their sticking together. When resilient floors are to be installed on this type of concrete subfloor, the breaker compound should be removed by grinding to assure proper bonding of the flooring adhesive.

The performance of resilient flooring over radiant-heated concrete subfloors

Thermal Conductivity

K-90—BTU/HR./SQ. FT./°F/1" THICKNESS*



Conductance is the working value desired for calculation of heat flow. To obtain conductance, divide thermal conductivity by thickness of material. Thus, .125" white Linotile, with a "K-90" factor of 2.1, will conduct 16 BTU's/hour/sq. ft./deg. F. Thermal conductivity of resilient flooring materials varies according to type, color, and installation method. Contact the Armstrong Cork Company for specific recommendations when thermal conductivity is of special importance. The temperature difference between the surface of a radiant-heated subfloor and the surface of the resilient floor (except Cork Tile) will average 2.5°. With Cork Tile floors, the difference is from 9° to 15°.

Increased use of radiant heating in modern homes and buildings has brought many requests for complete information on the performance of resilient flooring materials over heated subfloors.

In order to be able to provide specific and unbiased recommendations for resilient flooring installations over radiant-heated floors, the Research and Development Center of the Armstrong Cork Company has conducted a series of extensive tests since 1944. Under both experimental and on-the-job conditions, observations have been made of the effects of normal and severe floor temperatures on the hardness, composition, and indentation properties of all Armstrong Resilient Floors.

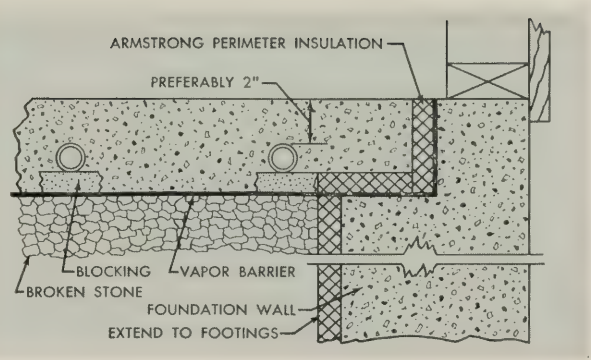
The results of these tests show that there is virtually no loss of heating efficiency through the use of resilient flooring materials. With floors of asphalt tile, Excelon Tile, linoleum, Linotile, Corlon, and rubber tile, temperature difference between the surface of concrete subfloors, commonly used in radiant heating installations, and the resilient flooring surface, is about 2.5 degrees F. With floors of cork tile, which has a thermal conductivity or "k" factor lower than the other resilient flooring materials, the difference is several degrees F. greater. None of these temperature variations, however, is great enough to result in appreciably increased fuel consumption since the time lag required to bring resilient flooring, of the thicknesses commonly used, to the operating temperature of radiant heating systems is insignificant.

No Harmful Effect

The observations of the Armstrong Research and Development Center have also shown that floor heat, within the limits commonly recommended for radiant heating, has no harmful effect on either the resilient flooring or the adhesives used in installation, provided that the temperature of the floor is kept at a level below 85° F. Both laboratory tests and actual field experience indicate that resilient flooring materials can be chosen for radiant-heated subfloors by exactly the same standards as those where other types of heating are employed. Each type of resilient flooring material is installed over a radiant-heated subfloor with the same adhesives and in the same manner as recommended for conventional floors. It should be noted in this connection that the use of radiant heating does not change the limitation that only certain types of resilient floors may be installed over concrete slabs in direct contact with the ground. (See pp. 11 and 12.)

The American Society of Heating and Air Conditioning Engineers has established 85° F. as the maximum surface temperature for radiant-heated floors. Floor temperatures higher than this are considered uncomfortable underfoot. Because of their thermoplastic quality, asphalt tile and plastic asbestos tiles become slightly softer, and indent more easily, when radiant heating temperatures run above normal. The usual measures used to protect resilient flooring against indentation, described on page 45 of this book, are adequate to prevent indentation in Armstrong Asphalt Tile or Excelon Tile when floor temperatures do not exceed this standard 85° F. maximum.

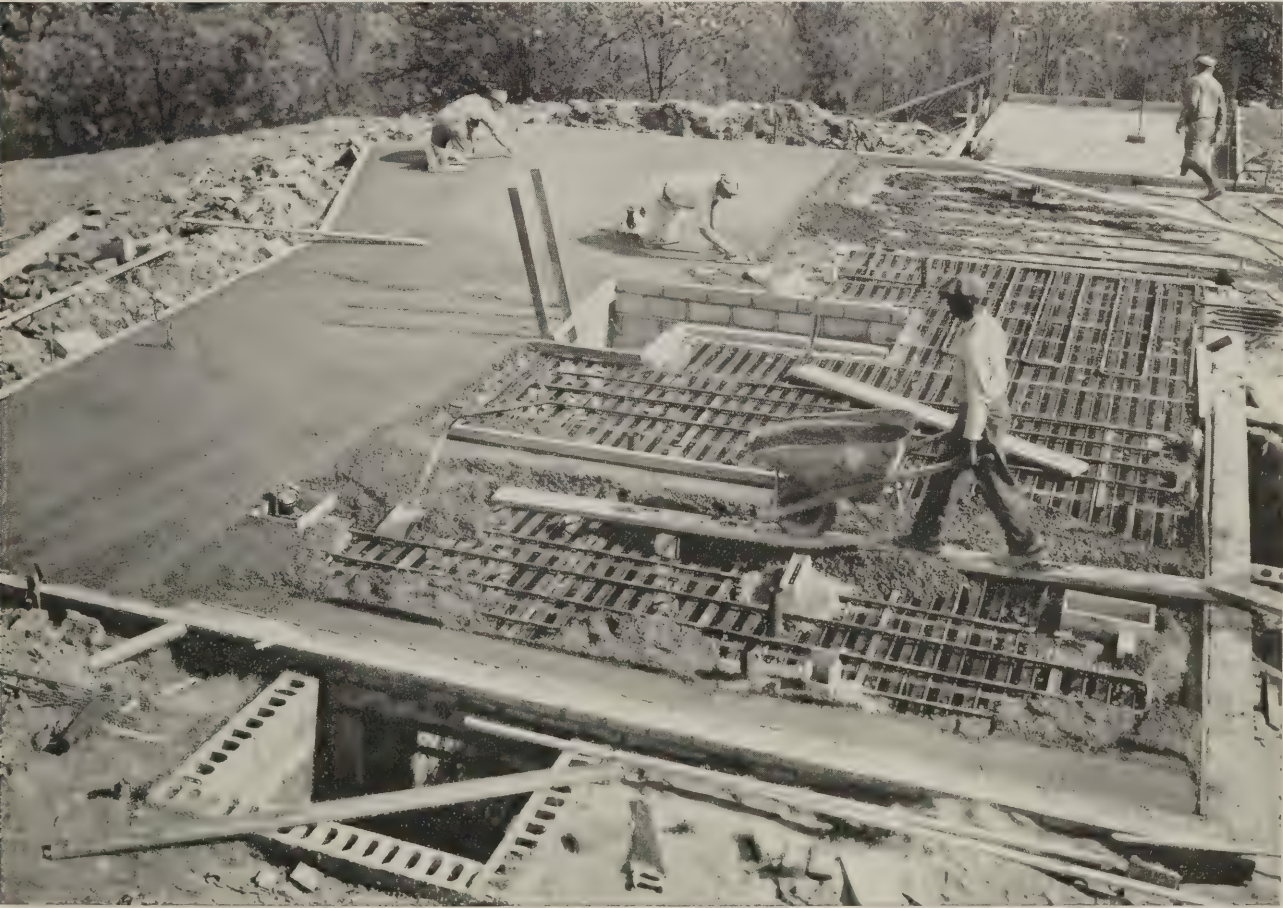
Certain characteristics of radiant heating systems as recommended by the American Society of Heating and Air Conditioning Engineers have an important bearing on maintaining comfort during cold weather without requiring floor temperatures above 85°. These are adequate perimeter insulation for the slab, appropriate insulation of the building, and reasonably low infiltration. The pipe grid layout should give adequate coverage without excessively high water temperatures, and the spacing of pipes should be such that there is a minimum of temperature variation between the area directly above the pipes and the area above the space between them. While none



Section through a floor panel using Armstrong Perimeter Insulation. Note that the insulation extends around the edges of the slab in contact with all the exterior foundation walls.

of these design features is within the appropriate scope of Armstrong recommendations, each factor has been carefully considered by the Armstrong Research and Development Center in evaluating its test results. When these standards are used as the basis for the design of radiant heating systems, Armstrong Resilient Floors may be installed with assurance of the same excellent performance they have demonstrated in other applications.

This photograph shows the final construction stage of a radiant heating installation. The method of perimeter insulation described in the figure above is being used. The pipe circuit is closed and tested under pressure before concrete is poured.



Relative costs of resilient floors

Beyond the service and style variations in the many types of resilient floors, there are also wide differences in costs. They range all the way from the economy flooring materials, such as the "A" colors in asphalt tile and light gauge linoleum, to the luxury floors of rubber tile, vinyl-plastic Custom Corlon Tile and Custom Vinyl Cork Tile. In addition, costs of resilient floors can vary widely depending upon the design. A floor in a single color or styling laid wall to wall generally is less costly than a complex custom styled floor involving exceptional craftsmanship and fine attention to detail on the job.

As manufacturers of resilient floors, the Armstrong Cork Company cannot safely quote actual installed prices since there are many factors that affect the cost of the floor installation beyond the price of the material. As mentioned above, the floor design alone can have an important bearing on the cost. Other items that must be taken into account include subfloor conditions and labor rates and efficiencies. Such factors vary from one section of the country to another as well as from job to job.

An outright specification for Armstrong materials will still result in competitive bidding from a number of flooring contractors and at the same time give assurance of top quality materials. The invitation to bid should indicate all the items which fall within the scope of the flooring contractor's work in addition to the flooring materials. The flooring contractor's ability and reputation should then be considered in determining the best value.

The price ranges into which the different types of resilient flooring materials can be classed are shown on the chart on the next page. From this chart it will be seen that Decoray Linoleum Tile and asphalt tile are considered the lowest cost resilient floors, with the "A" or darker colors of asphalt tile the most economical and grading up to the brighter "D" colors. Linoleum is next in line. However, the lighter gauges of linoleum are about equal to the most expensive colors in asphalt tile.

Further up the price scale is Excelon Tile, cork tile in the $\frac{1}{8}$ " gauge, Linotile, rubber tile, Custom Corlon Tile, and Custom Vinyl Cork Tile in the order named. Differences in gauge, color, and styling within a resilient flooring line all have a bearing on the cost of the job.

When fairly accurate costs are required prior to receiving bids, it is suggested that you call on your Armstrong representative for assistance. By determining the various factors involved, he can help you work out an approximate cost of the proposed flooring that will be suitable for estimating purposes.



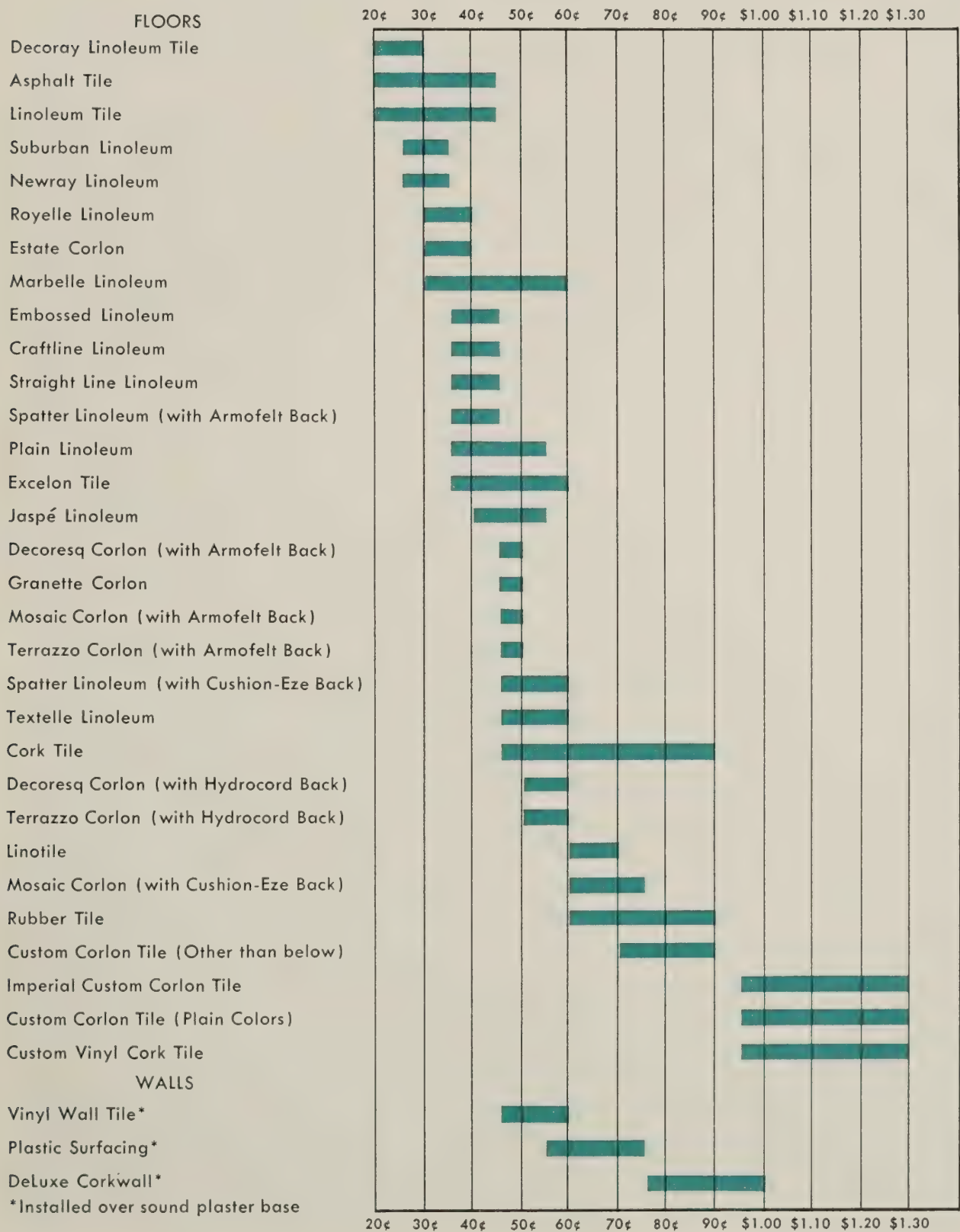
Floor designs can be effective without increasing the cost of the installation. This floor of Armstrong Rubber Tile is an example. Three colors were used in a simple diagonal design.

Elaborate custom styling such as in this floor of Armstrong Textelle Linoleum requires intricate cutting and fitting. The extra labor involved adds to the cost of the installation.



Approximate installed prices per square foot

(Over suspended concrete, minimum area 1000 square feet)



Comfort, noise, and indentation are controlled by ...

The resiliency of floors

Technically speaking, resilience is a property involving the elastic energy inherent in a material which causes it to regain its original shape when an external load is withdrawn. For practical purposes, however, the resiliency of a floor, in its broadest sense, affects more than its properties of recovery from indentation, important though these may be.

For the purposes of this article, resiliency is treated in the more comprehensive sense—as affecting underfoot comfort, and the noise generated by foot traffic, as well as the floor's resistance to or recovery from indentation by foot traffic and other short-term loads.

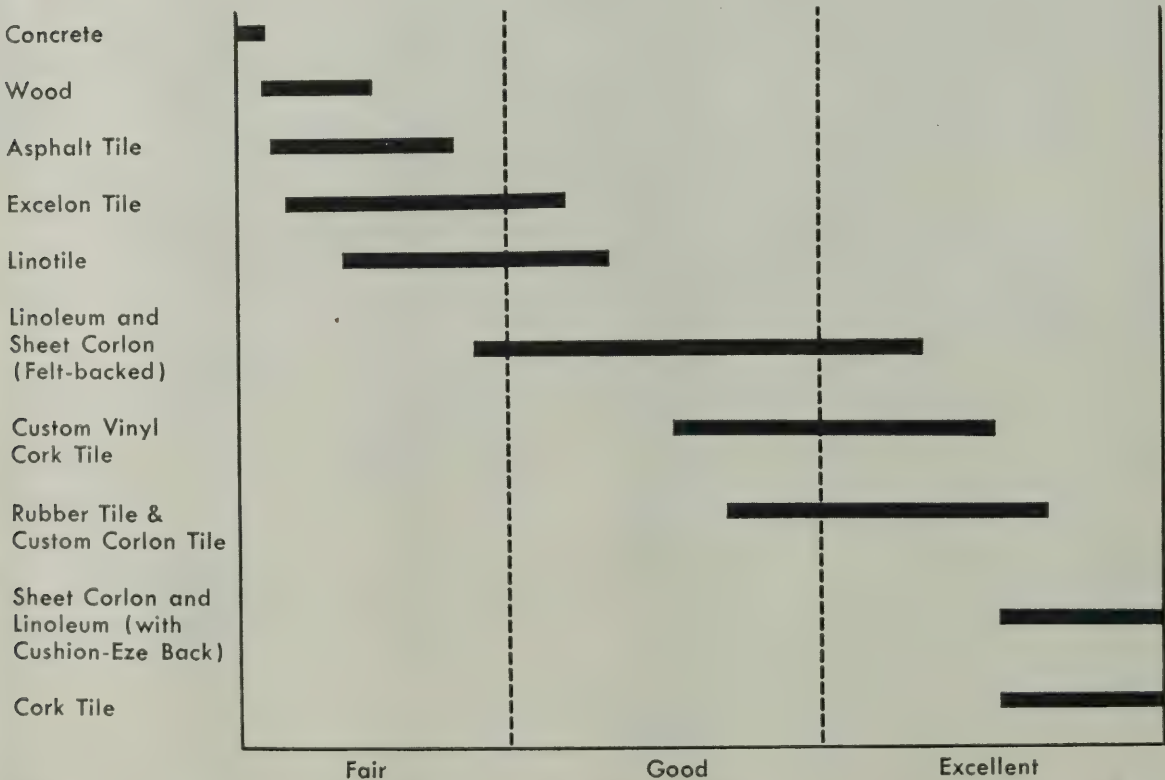
Recovery from indentation. In assessing the resilience of any particular flooring, the momentary indentations

involved in walking are those which are of primary importance. These pressures are quite high—often as much as several thousand pounds per square inch when contact is first made with the floor under the edge of the heel.

The method ordinarily used for measuring a floor's resiliency is the measurement of its recovery from short-term indentations. Such measurements are, of course, of great practical assistance in the selection of suitable resilient flooring—especially for heavy traffic areas. However, the standard testing procedures required by Federal Specifications for different types of flooring materials vary significantly. Therefore, no direct numerical comparison of the short-term indentation characteristics of various types of resilient floors can be made.

UNDERFOOT COMFORT

These ratings are based on data and experience obtained in the
Armstrong Research and Development Center



NOTE—The spreads shown are based on differences in underlayments and gauges.

Inability of a floor to recover from the indentation caused by temporary loads will also cause the floor to present an irregular and unsightly surface and to become difficult to keep clean.

Maximum Static Load Limits for Armstrong Resilient Floors

Type of Flooring	Load Limit Lbs. per Sq. Inch
Asphalt Tile and Excelon Tile	25
Cork Tile	75
Custom Vinyl Cork Tile	125
Linoleum and Corlon (all forms, all backings)	75
Linotile, Rubber Tile and Custom Corlon Tile	200

The table above indicates the maximum safe load limit on Armstrong Resilient Floors before the material becomes slightly indented. These figures are the results of indentation tests conducted by the Armstrong Research Laboratories and are used as a basis for computing the area of bearing surface of Armstrong Furniture Rests. These Furniture Rests and Cups are recommended to eliminate excessive indentation in resilient flooring caused by heavy static loads. See page 45 for recommendation of furniture rests.

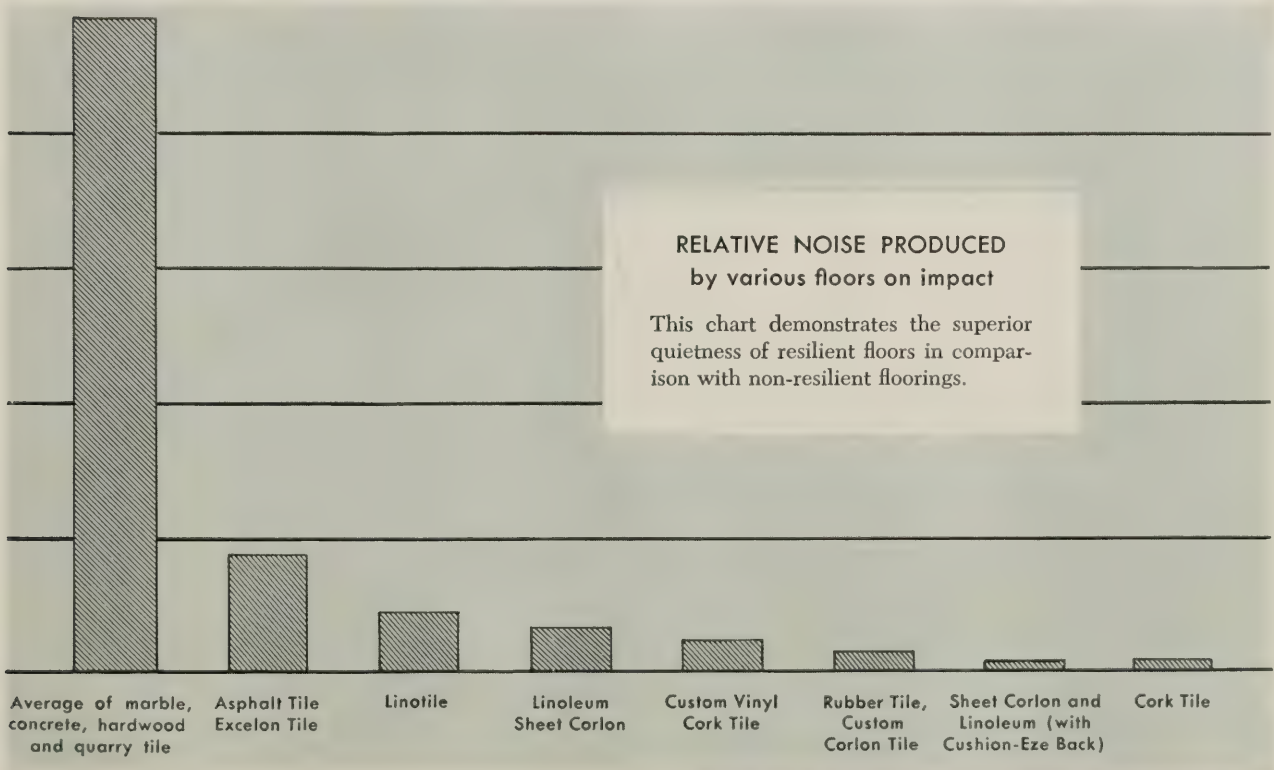
Underfoot comfort. While this is an important consideration in the selection of floors in any building, it becomes a vital factor in the many areas where prolonged periods of walking or standing tend to cause fatigue. Retail stores, hospital corridors, restaurants, and residential kitchens are obvious examples of types of locations where the efficiency of people may be seriously affected by comfort underfoot—and where the choice of the right floor may help considerably to reduce fatigue and increase efficiency. The accompanying chart (page

18) has been prepared by the Armstrong Research and Development Center for the purpose of helping to ascertain the relative “comfort” of all types of resilient floors. It must be emphasized that this chart is relative rather than absolute, since underfoot comfort is affected by factors other than the composition of the floor itself—such as the underlayment and adhesive used in the installation of the flooring material.

Quietness. With the public more aware of the disturbing effects of noise than ever before, the reduction of sound from floor traffic becomes increasingly important. The impact of footsteps on hard floors is a common source of annoyance—and in areas such as corridors, where the sound tends to reverberate through adjoining rooms, impact noise can become a very serious problem.

Resilient floors, because of their composition, give under the impact of footsteps, dropped objects, and rolling wheels. This cushioning effect actively reduces traffic noise. All types of resilient floors rate well as “low noise producers” in comparison with concrete or marble. Their relative noise-on-impact qualities are shown below.

It should be remembered that, while resilient floors will soften the sound of foot traffic, they will not appreciably subdue noise originating from other sources. “Sound conditioning”—or the absorption of noise such as the clatter of typewriters, kitchenware, and conversation—can best be accomplished by the use of acoustical materials. Neither resilient floors nor acoustical materials stop the passage of noise through the building structure.



Grease and alkali resistance of resilient floors

In commercial or residential installations, resilient floors may be subjected to three main sources of contamination from grease and alkalis. Contamination may be momentary, such as spilled grease, solvents, or alkalis, which are promptly wiped up. Such short-time contamination presents no problem, if the cleaning is thorough and the grease or alkali has not seeped down between joints or seams in the floor. Of greater problem is contamination that is more prolonged—generally by contact with milder concentrations of oil, grease or alkali from cooking residue, spillage, kitchen vapors, strong cleaners, or improper maintenance. The third usual source of contamination is the alkaline moisture from the earth passing through grade-level and below-grade concrete. The problems encountered under this alkaline moisture condition are described in detail in the section, “Which resilient floor over concrete,” pages 11 and 12.

The Armstrong Research and Development Center devotes continuing attention to developing materials with improved grease and alkali resistance for a wide variety of conditions to which floors may be subjected. The objective is to produce flooring materials which will not soften, swell, discolor, or change their physical properties under normal, accidental or even prolonged contact with grease and alkalis.

Testing

Laboratory tests are performed on resilient flooring materials with three considerations in mind. First, the tests must establish the degree of resistance to grease and alkalis of the various floorings made. Secondly, comparisons must be made of the various grades of each type of flooring. And thirdly, the information arrived at must be applied to the experimental production of new types of

resilient flooring, and these, in turn, must be tested.

Although this has been a subject very important to the flooring industry and one on which much work has been done, practically no standard test has been generally accepted in the trade.

There are now, however, a number of accurately controlled testing procedures, in the development of which Armstrong has played a major part. These have given rise to the following uniform terms which can be used as a guide in the choice of a resilient floor.

Grease resistant—flooring for residential use, and tested in vegetable oils.

Greaseproof —flooring for residential and commercial use, and tested in mineral as well as vegetable oils.

Armstrong Testing Procedures

In the Armstrong Research and Development Center, the grease-and-alkali problem has been under study for many years, and several tests have been developed that produce valuable results.

How well laboratory tests conducted in the Armstrong Research and Development Center have correlated with actual behavior in the field is evidenced by the fact that Armstrong has developed a number of flooring materials with good to excellent grease and alkali resistance. However, claims made during the past few years for the “plastic” flooring have accentuated the need for sharper distinctions in testing methods. In fact, some of these tests which Armstrong has used in the past are no longer precise enough to evaluate the grease and alkali resistance of the various grades of plastic-type flooring materials now being offered.

Armstrong Abrasion Tester. The Armstrong Research and Development Center has developed an improved method of determining grease resistance by using the Armstrong Abrasion Machine. The technique used with this equipment permits a quantitative determination of the grease resistance of the flooring material by measuring the abrasion resistance before and after contamination with grease or oil. For floorings with burlap or felt backing, contamination is measured for the surface only. Homogeneous flooring materials, such as asphalt tile and rubber tile, however, can be totally immersed and then tested by means of the Abrasion Machine.

The Abrasion Machine provides a means of accurately and quantitatively assessing the effects of greases and oils. Because the machine is capable of testing eight or more samples of different materials at the same time, it supplies useful comparative data.

Immersion testing of Armstrong floorings. Immersion testing procedures for various types of floors measure the effects of prolonged exposure to grease or oils. In these continuing tests, materials are immersed for periods as long as several years while being continually observed for signs of deterioration.

At present Armstrong Linotile and the greaseproof tiles are virtually unaffected by the total immersion tests for

grease-oil resistance, and Armstrong Rubber Tile is only slightly softened. Although extremely severe, this test has great value because various materials are equally exposed to grease and oil for long periods of time.

Tests lead to product improvements. Armstrong testing procedures have led to steady improvement of the grease- and oil-resistant properties of various types of Armstrong resilient flooring materials.

Armstrong Rubber Tile is now recommended for domestic kitchens. Both Rubber Tile and Armstrong Custom Corlon Tile may be installed below grade if Armstrong No. S-104 Chemical-Set Waterproof Cement is used, and on grade with No. S-235 On-Grade Cement or S-104 Chemical-Set Cement (see chart, page 40). Excelon Tile, a vinyl-asbestos tile, has been developed to provide exceptionally high resistance to both grease and alkali. Regular Asphalt Tile has low grease resistance, but is highly resistant to alkali. Greaseproof Asphalt Tile also retains good alkali resistance. Sheet Corlon and Custom Corlon Tile are exceptionally resistant to the harmful effects of both grease and alkaline solutions.

The qualitative resistance of Armstrong floorings is shown in the accompanying table. These flooring materials should be selected for specific installations according to the degree of surface alkali or grease resistance required.

Grease-alkali resistance chart

SURFACE GREASE RESISTANCE

		Poor	Fair	Good	Excellent
SURFACE ALKALI RESISTANCE	Excellent	Regular Asphalt Tile (A & B colors)	Regular Asphalt Tile (C & D colors)		Corlon Custom Corlon Tile Excelon Tile Custom Vinyl Cork Tile
	Good			Rubber Tile	Grease-proof Asphalt Tile
	Fair		Cork Tile		
	Poor				Linoleum Linotile

Light reflectivity

Today, there is a growing awareness on the part of industry, education authorities, hospitals, and other institutions—and even the home owner—of the effects of the brightness and quality of light. As a consequence, the light reflectivity factor of resilient floors takes on additional importance. This is particularly true in view of the fact that the floor is often the largest single area of decorative color in an interior.

The percentage of incident light reflected by a floor—or any other decorative medium—must be adjusted to take into consideration the fact that the human eye is more sensitive to some colors than to others. A person with normal color vision is most sensitive to a wave length of about 570 millimicrons—a greenish yellow in approximately the middle of the visible spectrum—and sensitivity falls away toward both the red and violet end of the spectrum. The accompanying table of light reflectivity values of various types of resilient flooring is therefore weighted to take this eye-sensitivity into account.

In addition to color, gloss also has some effect on the light reflectivity of a material—a high gloss sample will have a lower light reflectance. This is illustrated below.

In Fig. 1, a matte surface reflects light in all directions but, as shown in Fig. 2, a high gloss surface reflects most of the light in the direction of specular reflection and a relatively small amount in the direction in which the light reflectance measurement is made. If this material is viewed at the angle of specular reflection, it will appear

very bright, but what will be seen will be a more or less distinct image of the source of illumination combined with light reflected by pigment particles of the material. Therefore, the colors in a high-gloss waxed and polished floor will appear somewhat darker than the same colors in a material with a matte finish. This is especially true of the darker colors. For example, the black in Armstrong Custom Corlon Tile, Pattern No. 462, Imperial Black, with its high gloss, appears to be much darker than the black in Ebony Asphalt Tile, No. B-905, which has a low gloss surface.

Apart from its effect on the light level of the room, gloss has a considerable influence on the appearance of the finished floor. Very glossy flooring materials tend to show up minor irregularities in the subfloor surfaces. Imperfections that may not be noticeable in the bare subfloor become obvious when the resilient floor has been installed. *Very glossy materials, therefore, require careful subfloor inspection and preparation in order to insure the best appearance. Extra maintenance care also is required.*

Since the great majority of resilient floors are made of combinations of different colors, the light reflectance figures shown on the chart are average values based on a large area of the pattern. These values range from a high of 61.6% for Plain White Custom Corlon Tile to a low of 1.8% for Plain Black Custom Corlon Tile. In rooms where the light reflectance of the floor is important, practically any value can be obtained by choosing from the various types of Armstrong resilient floors.

FIG. 1

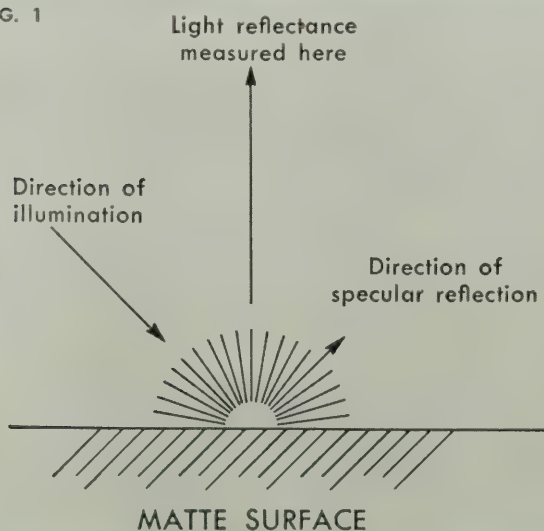
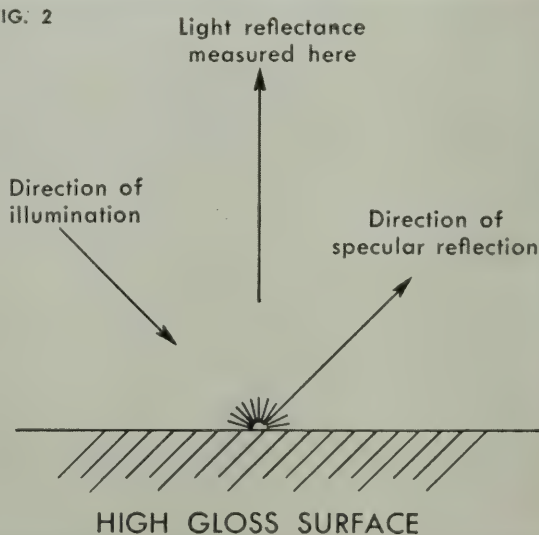


FIG. 2



LIGHT REFLECTIVITY VALUES OF ARMSTRONG RESILIENT FLOORS AND WALLS

Light Reflectivity in %	Linoleum						Resilient Tiles				Plastics			Walls
	Plain No.	Decoray, Newray, & Jaspé No.	Textelle, Royelle & Mar-belle No.	Sub-urban No.	Straight Line, Craft-line & Em-bossed No.	Spatter Lino-leum No.	Asphalt Tile No.	Lino-tile No.	Rubber Tile No.	Cork Tile & Custom Vinyl Cork Tile No.	Sheet Corlon No.	Custom Corlon Tile No.	Excelon Tile No.	Plastic Surfac-ing, Vinyl Wall Tile & Cork-wall No.
62 to 50	23		015 1556								6180 6184 6212 6214 6404 6406 6507	475 1400 1407 1460		8601* 8602 8604 8501 8502 8504
50 to 45	48		09 030		5151	5000		171 191	609 636 653		6502 6506	460 476	735	8606
45 to 40		1803 1810	1503	10001 10051	5390 5490	5005		174	651		6183 6301 6403 6505	1402	742 774	443 8503 8505 8506 8507 8603 8605 8607
40 to 35		1863	1502 1508 1522 1523		5150 5161	5007	D-927 D-990	178	664		6181 6300 6320 6400 6402 6501 6503	472 474 1403 1405 1409	770 775 776	
35 to 30		1800 1805 1812 1850	047 1553	10004 10054	5160 5510 5520	5018 5025 5026 5027 5028	D-900 D-942 D-996	176 183	610 632 633		6187 6200 6201 6321 6340 6405 6408 6508	473	736 740 745 761 762 771 781 782 788	
30 to 25	45	1802 1806 1807 1813 1851 1852 1861 1870	04 014 018 036 042 050 1500 1501 1516 1552	10002 10003 10052 10053	1690 5110 5140 5141 5300 5351 5393 5511 5793	5004	C-926 D-970 C-971 974 C-991 C-993 D-998	170	611 622 634 637		6185 6186 6207 6341 6407 6409 6504	461 467 469 471 1408	737 760 778 779 780 783 798	8508
25 to 20	24 50	1804 1860 1871 1872	08 048 1509 1521 1550 1555	10000 10050	1693 5112 5310 5392 5491 5500 5501 5792	5014 5019	D-911 C-944 C-947 C-961	169 173 185 187	630 631 656	410	6209 6213 6500	1404 1406	738 743 763 787	440 441
20 to 15		4 13 16 1801	049 1551 1554		5311 5321 5352 5521 5530	5022	C-946 975 C-995	186 189 190	625	1005	6208 6211 6401	1410	744 764 765 777 784 789 797	442
15 to 10	22 34 39	1811 1855 1873	1			5024	C-902 C-907 976 C-997	172 175 177	614 635 652		6204 6205 6215 6410	470 477	739 741 785 786	8600
10 to 05	20 25		029 1520				A-200 B-905 B-919 C-924 B-935 D-952 D-964 B-992 B-994		665		6182 6202 6203 6210	1401	772 799	
05 to 00	21 27		021				A-210 B-918	180	613 649 695	411		462 1461		8500

Desk Top Linoleum Reflectivity Values—Pattern No. 416=36%—Pattern No. 415=36%—Pattern No. 426=9% *70.2%
Pattern No. 420= 8%—Pattern No. 421= 4%

For today's buildings, here is some helpful information on the . . .

Gauges of resilient flooring

The most obvious reason for concern with the gauge or thickness of a resilient floor is its effect on the length of service it will give. Once this was the most important factor in the selection of flooring. Until a few years ago, American gauges closely followed the thicknesses of those made in Europe. There, construction was expected to last for centuries, and demanded the thickest gauges that could be produced, with little or no heed to the cost of such materials. "Battleship" linoleum, for instance, meant 3/16" or thicker, and was actually made in both 1/4" (0.250") and occasionally 8 mm. (0.315") to special order.

Today, as a result of long experience in the resilient flooring industry, modern manufacturing methods, and improved materials have been developed, imparting vastly superior qualities of durability—and far greater economy. Gauges which were once regarded as being too "light" for satisfactory performance now appear more than adequate for most residential and commercial areas. Furthermore, with the modern trend toward frequent redecoration, durability has become a somewhat less important consideration, as flooring is often replaced when far from worn out.

There are, however, other properties of resilient flooring that are affected by its gauge . . . notably appearance and comfort. The thicker the gauge, the better the resilient floor hides subfloor irregularities, and the better appearance. The floor's comfort value and quietness also increase with the gauge.

Resilient Tiles

In the case of homogeneous, unbacked tile floors, gauges exceeding 1/8" are seldom used except in commercial installations where maintenance and traffic conditions are extremely severe. In any flooring installation, of course, it is necessary to take into consideration factors other than gauge. In choosing a flooring material, the proper *composition* for the type of service it will undergo must be decided *first*. Then the gauge of that material is considered. From the point of view of durability, the thinner gauges of the chosen composition will meet most requirements where the amount of maintenance is expected to be reasonable. But if quietness and comfort are of major importance, thicker gauges should be chosen.

For locations where poor maintenance or severe traffic conditions are involved, the thickest available gauge in the correct flooring material should be chosen. There are some compositions of tile such as Linotile, in which only one "all-purpose" gauge is available. Here it is safe to assume that the nature of the tile makes it applicable

over a broad range of conditions in the type of service for which it was designed.

Linoleum and Sheet Plastic Floors

Development of backing materials. Backings were originally used on resilient floors merely as a carrier to support the flooring materials during processing. Now they make important contributions to the flooring by adding even greater resilience and comfort. Recent developments include special felts such as Armstrong Armofelt. This backing material, saturated with resins, gives very superior performance.

Newest developments in backings make them even more functional. A foam backing, Cushion-Eze provides a combination of comfort, sound deadening, and reduced maintenance requirements never before available in resilient flooring. Cushion-Eze is offered on certain stylings of Armstrong Linoleum and sheet Corlon.

Hydrocord is another new backing development. It is a new water-resistant backing available on certain stylings of sheet Corlon. A highly flexible, inert composition, Hydrocord is unaffected by alkaline moisture, thus making possible for the first time the installation of resilient sheet flooring over on-grade concrete subfloors.

The gauge of the resilient flooring material cannot be considered without reference to both the composition of the flooring material and its backing. Some of the newer resilient floors in their thinner gauges provide durability equal to or better than that supplied by thicker gauges of the more traditional materials. This is due to the superiority of their compositions as well as newly developed synthetic binders.

Selection of gauge. In choosing linoleum, Light and Standard gauges should be used only in areas of light service, or where initial cost dominates considerations of durability. Heavy gauge linoleum should be used for most commercial installations, since such floors are subjected to concentrated traffic.

The durability of the new plastic compositions permits plastic flooring materials to be manufactured in thinner gauges with serviceability equal to that of linoleum in heavier gauges. For example, the thinner gauges of Armstrong Corlon plastic flooring can be regarded as equal to Standard gauge linoleum.

The gauge and type of backing of resilient flooring affect its "comfort value." For a comparison of this quality, as it applies to various types of resilient floors, see page 18.

Suggested resilient floor gauges for commercial (including institutional), residential, and industrial installations

Heavier gauges eliminated where thinner gauge represents a more economical value

Material	Over-all Gauge	Wear Layer Thickness	Suggested use indicated by colored blocks				
			Severe Commercial	Commercial	Light Commercial	Residential	Light Residential
ASPHALT TILE, Standard	3/16"	3/16"					
	1/8"	1/8"					
	3/16"	3/16"	Heavy Industrial for Static Control				
	1/8"	1/8"	Industrial for Static Control				
Conductive							
EXCELON TILE	1/8"	1/8"					
	Service Gauge	1/16"					
CUSTOM CORLON TILE	1/8"	1/8"					
	3/32"	3/32"					
RUBBER TILE	3/16"	3/16"					
	1/8"	1/8"					
LINOTILE	1/8"	1/8"					
	5/16"	5/16"					
CORK TILE	3/16"	3/16"					
	1/8"	1/8"					
CUSTOM CORK TILE	3/16"	3/16"					
CUSTOM VINYL CORK TILE	1/8"	1/8"					
CORLON			Severe Commercial	Commercial	Light Commercial	Residential	Light Residential
Decoresq (Armofelt Back)	.070"	.030"					
Decoresq (Hydrocord Back)	.0625"	.030"					
Granette	.070"	.030"					
Terrazzo (Armofelt Back)	.070"	.030"					
Terrazzo (Hydrocord Back)	.0625"	.030"					
Mosaic (Armofelt Back)	.070"	.030"					
Mosaic (Cushion-Eze Back)	.110"	.030"					
Estate	.0625"	.020"					
LINOLEUM			Severe Commercial	Commercial	Light Commercial	Residential	Light Residential
Battleship, Heavy Gauge	.125"	.090"					
Plain, Heavy Gauge	.125"	.090"					
Standard Gauge	.090"	.050"					
Jaspé, Heavy Gauge	.125"	.090"					
Marbelle, Heavy Gauge	.125"	.090"					
Standard Gauge	.090"	.050"					
Light Gauge	.070"	.030"					
Textelle, Heavy Gauge	.125"	.090"					
Royelle, Standard Gauge	.090"	.050"					
Straight Line Inlaid, Standard Gauge	.090"	.050"					
Embossed Inlaid, Craftline, & Spatter-Standard Gauge	.090"	.050"					
Spatter (Cushion-Eze Back)	.125"	.050"					
Decoray, Service Gauge	.0625"	.026"					
Newray, Light Gauge	.070"	.030"					
Suburban, Standard Gauge	.090"	.050"					

Armstrong resilient floors meet or exceed requirements of . . .

Federal Specifications

Federal Specifications are written to establish minimum standards for purposes of competitive bidding and to insure that various government agencies will receive quality material. They do not necessarily include provision for all products or provide for products made exclusively by a single manufacturer and protected by patent laws. An example of this is Armstrong Linotile, an exclusive Arm-

strong flooring material unlike anything else in its classification. Some of the new plastic flooring materials also cannot be classed under a general Federal Specification because of the broad variation of materials in the market. Armstrong Floors not only meet the requirements of Federal Specifications pertaining to their classifications, but generally exceed the requirements.

Federal Specification SS-T-306b

TILE FLOOR; ASPHALT

Armstrong Asphalt Tile meets or exceeds the requirements of this Federal Specification for asphalt tile in $\frac{1}{8}$ " and $\frac{3}{16}$ " gauges.

Federal Specification SS-T-307

TILE FLOOR; ASPHALT GREASE RESISTANT

Armstrong Greaseproof Asphalt Tile meets or exceeds the requirements of this Federal Specification for grease-resistant asphalt tile in $\frac{1}{8}$ " and $\frac{3}{16}$ " gauges.

Interim Federal Specification L-T-751 (GSA-FSS)

TILE FLOOR; VINYL PLASTIC

(Type 1, Semi-Flexible)

Armstrong Excelon Tile meets or exceeds the requirements of this Federal Specification for vinyl plastic floor tile, semi-flexible, in 0.125" ($\frac{1}{8}$ ") gauge.

Interim Federal Specification L-T-751 (GSA-FSS)

TILE FLOOR; VINYL PLASTIC

(Type 2, Flexible)

Armstrong Custom Corlon Tile and Imperial Custom Corlon Tile meet or exceed the physical requirements of this Interim Federal Specification for flexible vinyl plastic floor tile in 0.125" ($\frac{1}{8}$ ") gauge.

Federal Specification ZZ-T-301a

TILE FLOOR; RUBBER

Armstrong Rubber Tile meets or exceeds the requirements of this Federal Specification for rubber tile in $\frac{1}{8}$ " and $\frac{3}{16}$ " gauges.

Federal Specification LLL-L-351b

LINOLEUM; BATTLESHIP

The regular colors in Armstrong Plain Linoleum meet or exceed all requirements of this Federal Specification for heavy gauge, 0.125" ($\frac{1}{8}$ ") linoleum on burlap backing.

Federal Specification LLL-L-367

LINOLEUM; PLAIN, JASPÉ AND MARBLEIZED

Armstrong Plain Linoleum, Jaspé Linoleum, Marbelle Linoleum, and Textelle Linoleum meet or exceed all requirements of this Federal Specification for heavy gauge, 0.125" ($\frac{1}{8}$ ") linoleum on burlap backing.

Federal Specification LLL-F-471

FLOOR COVERING; FELT-BACKED

(Type 1—Linoleum Composition; Class A, Roll Form, and Class B, Tile Form; Grade B and Grade C) All Armstrong Standard Gauge (.090") and Light Gauge (.070") Linoleum meets or exceeds the requirements of this Federal Specification for standard and light gauge linoleum on felt backing.

Federal Specification LLL-L-354

LINOLEUM; DESK TOP

Armstrong Desk Top Linoleum meets or exceeds the requirements of this Federal Specification for desk top linoleum.

NO FEDERAL SPECIFICATIONS

No federal specifications have been evolved for the following materials:

Armstrong Conductive Asphalt Tile

Armstrong Cork Tile, Custom Vinyl Cork Tile, and De Luxe Corkwall, as manufactured by a patented electronic process exclusive with the Armstrong Cork Company.

Armstrong Corlon (vinyl plastic sheet-form flooring with Armofelt, Hydrocord, or Cushion-Eze Backs)

Armstrong Linoleum with Cushion-Eze Back

Armstrong Linotile (homogeneous floor tile, oil-bonded)

Armstrong Plastic Surfacing

Armstrong Vinyl Wall Tile (See Fire Hazard Classification by Underwriters' Laboratories, Inc.)

Clear specifications for resilient floors

In writing specifications for resilient floors, it is important that the specifier understand, in general, the complexities of installation, labor, and material costs. It is equally important that the specification writer be able to correctly classify the materials and work to be done so that all bidding contractors will base their estimates on the same standards. In many instances, the misunderstandings that occasionally arise on a project stem from the incomplete details of the specifications. The lack of proper details can have a serious effect on the contractor's labor and material costs. Because of the variety of materials the specification writer works with, it is impractical for him to become familiar with all such details. However, if he has a working knowledge of variations in cost of resilient flooring materials, labor, and subfloor preparation, he should have little trouble in developing clear and concise resilient flooring specifications.

Price Variations in Flooring Materials

Among the factors which govern resilient flooring material prices are:

- Type and Style of the Resilient Flooring
- Type of Backing
- Gauge or Thickness of the Material
- Color and Graining
- Standard or Special Sizes

Resilient flooring materials are manufactured in several types and gauges to meet various service requirements. In many cases, each type is made in a number of stylings to permit greater design freedom.

One of the items often omitted from resilient flooring specifications is the naming of the particular flooring style and color group. This part of the specification is a very important factor in figuring costs. For example, Armstrong Linoleum falls into several price groupings according to gauge, style and backing as explained on page 16.

Armstrong Asphalt Tile prices vary according to color. The "A" or darkest colors are the lowest in cost and grade up in price to the "D" or lightest colors.

Armstrong Rubber Tile, Cork Tile, Custom Cork Tile, Custom Corlon Tile, Linotile, and Excelon Tile vary in product cost, but there is no price differential within the

color line. (The price structure of resilient floorings is explained in greater detail in the section titled "Relative costs of resilient floors" on page 16.)

One of the clearest ways to specify resilient flooring materials is to indicate the manufacturer's name and color number. When this is not possible, or if a floor design cannot be selected in advance, it is important that a clear understanding be given of the percentage of each material to be used. For example,

". . . 1/8" Asphalt tile design to be composed of color groups: B—25%, C—50%, D—25%, . . ." or,	". . . Linoleum in rooms 110 and 112 to be 1/8" Jaspé with 12" borders of 1/8" plain regular colors."
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Such a specification will give each flooring contractor a standard basis for figuring his bid.

Variations in Contractor's Installation Costs

The labor involved in laying a particular floor design is a big factor in figuring price. If the specification fails to give a clear idea of the complexity of the design, the contractor may base his bid on fewer installation man hours and underbid the job. In such cases, there is sure to be an expenditure of time and words—if not money—before the misunderstanding is settled.

To prevent such misunderstandings, it is recommended that detail drawings of at least one of the floor designs be shown when they are too complex for adequate written description in the specifications. A typical example of such a drawing is shown on page 28. Simplified specifications of materials, colors, gauges, and sizes shown on, or supplied with, the drawings will also be helpful.

Underlayment Requirements in Remodeling Jobs

On remodeling work it is always advisable to list all necessary repairs in the specifications, such as replacing badly worn boards, sanding floors, the use of hardboard underlayments such as Armstrong Temboard Underlayment or plywood—or the asphaltic or latex type of mastic underlayment, filling cracks in concrete, etc. Never use a blanket specification such as, ". . . the old subfloor shall be repaired to provide a suitable base for resilient flooring." Such specifications invariably invite the least expensive method of subfloor preparation, which is seldom to the advantage of the customer. From the contractor's point of view, competition leaves him no choice but to bid on the

least expensive methods. Tight subfloor preparation specifications put all contractors on an equal bidding basis.

It is not necessary for the specifications to state how the flooring contractor should install the flooring materials. It is far safer and more exact to specify that the resilient flooring materials be "installed in accordance with the

manufacturer's latest printed instructions."

SPECIAL NOTE: Since the Armstrong Line of floors is available to any legitimate flooring contractor, an outright specification for Armstrong materials will produce competitive bidding while also assuring the builder of premium quality materials.

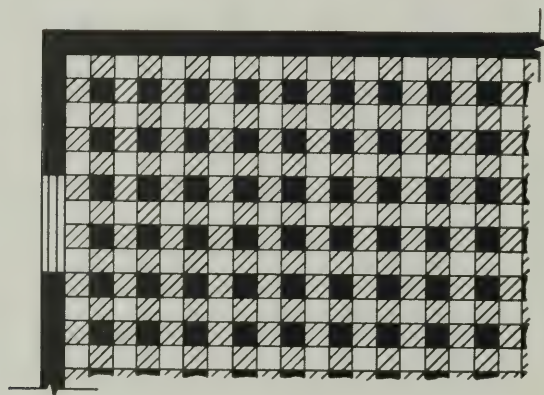
From specifications

Section No. 10 Resilient Flooring

Furnish and install 1/8" Armstrong Asphalt Tile and heavy gauge Armstrong Linoleum in the colors, patterns, sizes and designs shown on the drawings and in the areas listed in the schedule of finishes.

All products covered by these specifications are to be installed in accordance with the latest edition of Armstrong Installation Specifications by a qualified Armstrong flooring contractor whose bid shall include all the materials and labor required.

From detail drawings

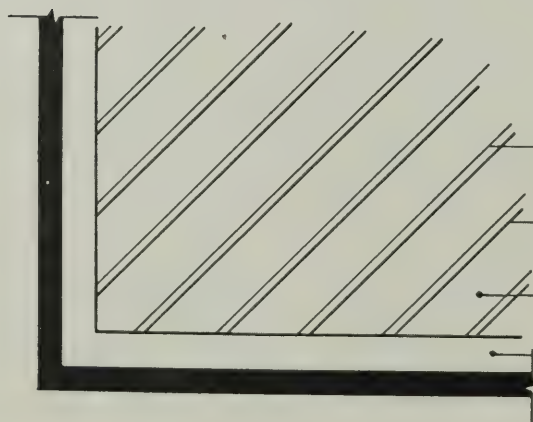


FLOOR DESIGN ROOMS

6 • 10 • 13 • 14

Armstrong
1/8" Asphalt Tile
All Tile 9" x 9"

- D. 942
- ▨ C. 924
- B. 935



FLOOR DESIGN OFFICE RM. 125

Armstrong
1/8" Gauge Linoleum

- #23 1" Linostrip
- #27 1/2" Linostrip
- #018 Marbelle
- #27 Plain

Simple detail drawings of the floor design with the manufacturer's color numbers indicated eliminate the need for a full description of the materials to be used. From the drawings and general specifications, the bidding contractor can quickly see the work involved in the flooring job. Installation methods approved by the manufacturer of the flooring should be specified.

Abridged specifications for resilient flooring

THESE SPECIFICATIONS COVER INSTALLATIONS OF

Asphalt Tile—Greaseproof Asphalt Tile—Corlon (Sheet Plastic)—Custom Corlon Tile—Linotile—Rubber Tile
Linoleum—Linoleum Tile—Cork Tile—Custom Vinyl Cork Tile—Excelon Tile—Conductive
and Greaseproof Conductive Asphalt Tile

Wall Coverings . . page 33

*Complete Unabridged Installation Specifications for any Armstrong Floor or Wall
Material (See Page 32) may be had upon request from any Armstrong office.*

How to Use—In the following specifications, items have been grouped by trades. Essential matter is presented as prewritten specification clauses in Roman type. Matter in *italics* is explanatory or indicates where the architect must fill in dimensions, brand names, etc. These specifications are arranged to facilitate the use of either an outright or descriptive product designation.

Caution—Armstrong Corlon with felt or Cushion-Eze Back, Linotile, and Linoleum with felt or Cushion-Eze Back should not be installed on any floor in direct contact with the ground. Armstrong Corlon with Hydrocord Back may be installed on grade in accordance with Armstrong Installation Specifications. Armstrong Rubber Tile and Custom Corlon Tile may be specified for grade-level and below-grade installation when installed in accordance with Armstrong Installation Specifications. Armstrong Cork Tile and Armstrong Custom Vinyl Cork Tile may be installed on grade in accordance with Armstrong Installation Specifications. Armstrong Asphalt Tile, Armstrong Excelon Tile and Armstrong Greaseproof Asphalt Tile are recommended for installation on subfloors on or below grade, as well as on suspended floors. Conductive Asphalt Tile may be installed over concrete subfloors in direct contact with the ground, on grade but not below grade, nor in hospital operating rooms.

BRIEF SPECIFICATION

Furnish and install Armstrong Resilient Floors in the types, gauges, colors, sizes, and designs as herein specified on areas listed below or where shown on drawings. (List areas here.) All products covered by these specifications are to be installed in accordance with the latest edition of Armstrong Installation Specifications by a qualified Armstrong flooring contractor whose bid shall include all the labor and materials required.

COMPLETE SPECIFICATION

SPECIFICATIONS FOR FLOORING CONTRACTOR

The General Conditions of the Contract are a part of these specifications.

1. Work Included

The contractor shall furnish all labor and materials required to complete all the resilient flooring and cove base work shown on the drawings, or herein specified, as follows:

- a. Linoleum, Sheet Corlon, Linotile, Asphalt Tile, Excelon Tile, Rubber Tile, Custom Corlon Tile, Cork Tile and Custom Vinyl Cork Tile floors, Flash Type Cove Base and/or Top-Set Asphalt and/or Rubber Cove Base.
(1) on the areas listed below, or
(2) where shown on drawings.
- b. Lining felt.
- c. Cleaning, waxing, and polishing of all work installed under this section of the specification.
- d. (*number*) samples 3" x 3" or larger, of each color and type of resilient floor and base.
- e. Shop drawings of designs of custom floors.
- f. Guarantee.
- g. Underlayment (*include when specifying hardboard, plywood, latex or asphaltic mastic floor fill when any underlayment is to be installed by the flooring contractor*). *Do not specify asphaltic floor fill over areas where Rubber Tile or Custom Corlon Tile is being installed with Armstrong No. S-104 Chemical-Set Waterproof Cement. Do not specify asphaltic floor fill as an underlayment for Linotile.*

2. Work Excluded

(Items which could be considered as part of this section, but which are included in the specifications for other trades.)

- a. Install resilient floors only to, but not under, the base of cabinets, cupboards, and other built-in furniture.
- b. Underlayment (*include when it is desired to have the installation of hardboard such as Armstrong Temboard® Underlayment, or plywood as an underlayment under the carpentry contract*).
- c. Heat and ventilation during cold weather to maintain 70°F. while laying is being done.

3. Linoleum

Linoleum shall be

- (1) Linoleum as manufactured by the Armstrong Cork Company, *or*
- (2) first-quality material and composed of an oxidized oleoresinous composition, pigments, and fillers and shall have a supporting backing. It shall be dense but resilient and highly resistant to abrasion.

3A. Plastic Flooring

Plastic floor covering shall be

- (1) Corlon (sheet-type) as manufactured by the Armstrong Cork Company, *or*
- (2) Custom Corlon Tile as manufactured by the Armstrong Cork Company, *or*
- (3) first-quality material composed of vinyl resins, alkaline resisting color pigments, and other plastic compounds, all thoroughly mixed to form a dimensionally stable and resilient flooring. It shall be dense, but resilient and highly resistant to abrasion. Roll or sheet-type material shall have a supporting back. Tile shall not have a supporting backing. Tile shall

Flooring installation specifications, continued

be accurately cut with square edges. The tile shall be capable of withstanding heavy furniture loads up to 200 lbs. per sq. in. without exhibiting permanent indentation.

- (4) Excelon Tile as manufactured by the Armstrong Cork Company, *or*
- (5) first-quality material, $\frac{1}{16}$ " or $\frac{1}{8}$ " thick, and composed of a thoroughly blended composition of vinyl plastic resins, asbestos fibers, alkali resisting pigments and fillers. It shall be dimensionally stable, fire-retardant and thoroughly resistant to alkali, grease and oils. Tile shall be uniform in thickness and accurately cut with square edges.

3B. Linotile

Tile shall be

- (1) Linotile as manufactured by the Armstrong Cork Company, *or*
- (2) first-quality material, $\frac{1}{8}$ " thick, and composed of oxidized linseed oil, resins, pigments, and fillers. It shall not have a supporting backing. It shall be dense but resilient, highly resistant to abrasion, and capable of withstanding heavy furniture loads up to 200 lbs. per sq. in. without exhibiting permanent indentation. Tile shall be accurately cut, with square, true edges, and uniform in thickness. The colors shall run entirely through the tile.

3C. Asphalt Tile—Standard, Greaseproof, Conductive, Greaseproof Conductive.

Tile shall be

- (1) Asphalt tile as manufactured by the Armstrong Cork Company, *or*
- (2) first-quality material $\frac{1}{8}$ " or $\frac{3}{16}$ " thick and composed of a thoroughly blended composition of thermoplastic binder of the asphalt and/or resinous type, asbestos fibers, pigments, and fillers. Tile shall be uniform in thickness and accurately cut, with square, true edges.

3D. Rubber Tile

Tile shall be

- (1) Rubber tile as manufactured by the Armstrong Cork Company, *or*
- (2) first-quality material, $\frac{1}{8}$ " or $\frac{3}{16}$ " thick, and shall be homogeneous throughout. It shall consist of a properly cured rubber compound free of objectionable odors. The tile shall be capable of withstanding heavy furniture loads up to 200 lbs. per sq. in. without exhibiting permanent indentation.

3E. Cork Tile

Tile shall be

- (1) Cork tile as manufactured by the Armstrong Cork Company, *or*
- (2) first-quality material, $\frac{1}{8}$ ", $\frac{3}{16}$ ", or $\frac{5}{16}$ " thick, and made from a selected grade of pure cork, homogeneous from face to back, free from any foreign fillers and thoroughly and evenly bonded with an added heat processed resinous binder. The tile shall be accurately cut and be uniform in thickness.

3F. Vinyl Cork Tile

Tile shall be

- (1) Vinyl Cork Tile as manufactured by the Armstrong Cork Company, *or*
- (2) first-quality material, $\frac{1}{8}$ " thick, capable of withstanding heavy furniture loads up to 125 lbs. per sq. in. without exhibiting permanent indentation. It shall be made from selected grades of pure cork, free from any foreign fillers, thoroughly and evenly bonded with an added heat-processed resinous binder, and shall have a vinyl surfacing fused to surface and beveled edges. The tile shall be accurately cut and uniform in thickness.

4. Colors, Patterns, and Sizes

- a. (*Always specify field and border color numbers to avoid confusion.*)
 - (1) field colors shall be, border colors and widths shall be, *or*
 - (2) field and border colors and sizes shall be as shown on the Schedule of Finishes.
- b. Feature strips shall be
 - (1) inches wide and (*color*), *or*
 - (2) as shown on the Schedule of Finishes.

5. Flash Type Cove Base

- a. Base shall be
 - (1) linoleum or sheet-type Corlon (*specify gauge and color*) with metal binding strip, end stops, corner pieces, and $\frac{7}{8}$ " wax fillet complete.
- b. Nail binding strips, end stops, and corner pieces tight to the wall with cement coated flat head or ring groove nails. Install wax fillet strip with Armstrong S-128 Paste.
- c. Base shall be ($4\frac{1}{2}$ " or 6") high.

6. Top-Set Rubber Cove Base

- a. Base shall be
 - (1) as manufactured by the Armstrong Cork Company, *or*
 - (2) rubber $\frac{1}{8}$ " thick with molded top-set cove, pre-formed end stops, internal and external corners.
- b. Base shall be in color and shall be (4" or 6") high.

7. Top-Set Asphalt Cove Base

- a. Base shall be
 - (1) as manufactured by the Armstrong Cork Company, *or*
 - (2) asphalt $\frac{1}{8}$ " thick with molded top-set cove.
- b. Base shall be sufficiently flexible so that internal and external corners can be formed easily from 3- or 4-foot sections by heating and bending.
- c. Base shall be in color and shall be (4" or 6") high.

8. Adhesives

- a. For Corlon (with felt or Cushion-Eze Back) or Linoleum
 - (1) Armstrong S-128 Paste, *or*
 - (2) Armstrong S-214 Waterproof Cement, *or*
 - (3) As approved by the manufacturer of the flooring.
- b. For Corlon with Hydrocord Back
 - (1) Armstrong S-235 On-Grade Cement.
- c. For Linotile, Rubber Tile or Custom Corlon Tile
 - (1) Armstrong S-130 Resilient Tile Paste, *or*
 - (2) Armstrong S-214 Waterproof Cement, *or*
 - (3) Armstrong S-104 Chemical-Set Cement or Armstrong S-235 On-Grade Cement where Armstrong Rubber Tile or Custom Corlon Tile is being installed on grade level. (*Do not install Linotile on or below grade.*), *or*
 - (4) Armstrong S-104 Chemical-Set Cement (*where Rubber Tile or Custom Corlon Tile is being installed below grade*), *or*
 - (5) as approved by the manufacturer of the tile floors.
- d. For Cork Tile or Custom Vinyl Cork Tile
 - (1) Armstrong S-130 Resilient Tile Paste, *or*
 - (2) Armstrong S-214 Waterproof Cement.
- e. For Asphalt Tile, Greaseproof Asphalt Tile, Conductive Asphalt Tile or $\frac{1}{8}$ " Excelon Tile
 - (1) Tile shall be installed with
 - (a) Armstrong S-160 Emulsion, *or*
 - (b) Armstrong S-90 Cement, *or*

Flooring installation specifications, continued

- (2) Asphalt Tile and Asphalt Cove Base shall be installed with adhesives approved by the manufacturer of the asphalt tile and the cove base.
- f. For Service Gauge Excelon Tile
 - Tile shall be installed with
 - (a) Armstrong S-128 Paste, *or*
 - (b) Armstrong S-130 Resilient Tile Paste, *or*
 - (c) Armstrong S-160 Emulsion, *or*
 - (d) Armstrong S-90 Cement, *or*
 - (e) Armstrong S-700 Brushing Cement.
- g. For Cove Base
 - (1) Top-Set Rubber Cove Base shall be installed with Armstrong S-1200 Corlex Cement.
 - (2) Top-Set Asphalt Cove Base shall be installed with Armstrong S-245 Top-Set Asphalt Cove Base Cement.
- h. Lining felt shall be installed with Armstrong S-128 Paste, *or* Armstrong S-130 Resilient Tile Paste, *or* Armstrong S-214 Waterproof Cement.

9. Lining Felt

Lining felt shall be

- (1) Armstrong S-149 Heavy Duty Felt, *or*
- (2) Armstrong S-150 Semi-Saturated Asphalt Rag Felt, *or*
- (3) as approved by the Armstrong Cork Company.

10. Samples

- a. Architect must approve samples before job starts.
- b. Samples must be labeled, stating color, gauge, and location in which they are to be used, and the maker's name.

INSTALLATION

Note: For methods of installing resilient floors over different types of subflooring—see Table, page 40.

11. Subfloor

- a. Lay the resilient flooring on a subfloor of (state type) which this contractor shall inspect before starting work.
- b. Notify the architect in writing of any defects in the subfloor. Do not proceed until such defects have been corrected. Starting of work shall imply acceptance by this contractor of the subfloor.

12. Preparation

- a. The subfloor will be delivered to this contractor broom clean, free of all foreign matter and thoroughly dry.
- b. Fill all cracks, expansion joints, etc., in concrete subfloors with Armstrong S-190 Crack Filler.
- c. Prime wood subfloors that have been sanded with one brush coat of Armstrong S-140 Floor and Wall Size.

13. Laying

- a. Lay the resilient floor so as to be true, level, and even with tight joints, and in accordance with manufacturer's installation instructions.
- b. Lay sheet resilient flooring at right angles to floor boards. If a seam parallels the floor boards, paste Armstrong S-96 Seam Protector directly under flooring seams and over the felt.
- c. Match patterned sheet-type flooring at all seams.
- d. On wood floors, lay all resilient tiles (except asphalt and $\frac{1}{8}$ " Excelon Tile) diagonally to the direction of the floor boards. Keep all joints symmetrical.
- e. Fit borders accurately.
- f. Fit to and around all permanent fixtures.
- g. Roll in two directions with 100-pound or heavier roller. (Optional for asphalt tile or $\frac{1}{8}$ " Excelon Tile.)
- h. Clean off surplus adhesive according to manufacturer's instructions.

14. Other Subfloors

For subfloors not covered in these specifications, such as metal, magnesite, ceramic tile, etc., write direct to Armstrong Cork Company, Lancaster, Pa., for recommendations.

15. Installing Flash Type Cove Base (select suitable clauses below)

- a. For concrete floors not plugged, set $\frac{5}{8}$ " diameter wood plugs, at least 1" long, flush with the concrete floor for nailing end stops and corner pieces of base.
- b. For concrete walls not having wood grounds, set $\frac{5}{8}$ " diameter wood plugs at least 1" long in the walls at proper height, not over 9" on center, flush with concrete for nailing binding strip, end stops, and corner pieces of base.
- c. Install binding strip, end stops, and corner pieces with cement-coated flat head nails or drive screws, securing pieces flush and tight to wall and floor.
- d. Install $\frac{7}{8}$ " wax fillet strip at intersection of floor and wall with Armstrong S-128 Paste.
- e. Fit base sheet-type flooring to binding strip, stops, etc., and to floor. Paste with S-128 Paste. Miter corners at floor so that field or border is flush with flashed flooring.

16. Installing Top-Set Rubber Cove Base

- a. Firmly cement rubber cove base to wall with Armstrong S-1200 Corlex Cement.
- b. Form internal and external corners using preformed rubber cove base corners or in accordance with manufacturer's instructions. Install with Armstrong S-1200 Corlex Cement.

17. Installing Top-Set Asphalt Cove Base

- a. Firmly cement the asphalt cove base to wall with Armstrong S-245 Top-Set Cove Base Cement.
- b. Form internal and external corners from three- or four-foot sections of base in accordance with manufacturer's instructions. Accurately scribe base to trim and plinth.

18. Stair Treads

- a. Install resilient flooring on all stair treads, including top treads, landings, and platforms (specify locations).
 - (1) Treads must finish flush with metal nosings, *or*
 - (2) provide and install a continuous nosing (specify kind), with top edge flush with the surface of resilient floor. Secure rigidly in place by (specify method).

19. Cleaning and Waxing

Clean all flooring thoroughly in accordance with manufacturer's maintenance recommendations.

20. Guarantee

This contractor shall guarantee that all work executed under this section of the specification will be free from defect in material and workmanship, provided any such defect is brought to the attention of the contractor in writing within one year after completion of the work. Upon such notice, the contractor shall, at his own expense, make the necessary repairs or replacements of the defective work in question. The owner shall, however, be responsible for the removal and replacement of all fixtures and equipment attached to the surface on which the work will be done.

ITEMS FOR CARPENTRY SECTION

1. General

Wood subfloors shall be brought to a smooth, even surface a sufficient distance below the finished floor level to allow for the installation of the resilient flooring.

2. Single Wood Floors

(Never install resilient flooring over single wood subfloors.)

- a. (For single wood floors of tongue-and-groove boards not over 4" face width.) Cover the floor with a layer of hardboard (such as Armstrong Temboard Underlayment) or $\frac{3}{8}$ " or heavier plywood grade "BD" or better,

Flooring installation specifications, continued

firmlly nailed with cement or rosin-coated or ring-grooved nails or approved stapling equipment, spaced not more than 4" apart in both directions and at all edges. The pieces shall be not larger than 4' x 4' and laid ashlar fashion $\frac{1}{32}$ " apart, with continuous joints at right angles to floor boards. (In the case of hardboard, include: "with sanded side up.")

b. (For single wood floors not tongue-and-grooved.)

- (1) Cover the floor with $\frac{25}{32}$ " kiln-dried tongue-and-groove flooring, not over 3" face, laid at an angle of 45° to the under layer. Cut end joints square, drive tight, and blind-nail with 8d cut flooring nails.
- (2) Cover with $\frac{1}{2}$ " or heavier plywood, BD or better.

3. Single Plywood Floors

Cover the joists with $\frac{3}{4}$ " 5-ply plywood of a grade BD or better, in a size of not over 4' x 8'. Install with surface grain direction perpendicular to joists with the joints parallel to the joists staggered. All joints parallel to joists to be centered over the joists. Install 2" x 3" or heavier cross blocks between joists under all joints of the plywood at right angles to joists. Floor joists to be not over 16" O.C. Plywood shall be face nailed at every bearing with 8d ring-grooved or rosin-coated nails, spaced at intervals of 6 inches, and around perimeters at intervals of 4 inches.

4. Double Wood Floors

Install double wood floors (list areas). Under layer shall be $\frac{7}{8}$ " tongue-and-groove boards not over 8" wide. Lay boards at right angles to the joists, with the end joints square, staggered, and over bearings only. All boards shall be face nailed at each end and at every bearing with two 8d nails. Finish flooring shall be as specified in 2 above. (If the finish flooring is omitted, cover the under layer as in 2 a.)

5. Repairing Old Wood Floors

Existing floors throughout (specify areas) shall be repaired as follows: (Select clauses from (1) to (4) if existing floors are uneven and are not being leveled with floor fill).

- (1) Fill cracks wider than $\frac{1}{8}$ " and holes larger than $\frac{1}{4}$ " with plastic wood or snugly fitted wood plugs.
- (2) Replace defective boards with new material.
- (3) Renail boards where necessary to make secure.
- (4) If the finish flooring is omitted, cover the under layer as in 2 b above.

6. Baseboards and Plinths

Extend all wood baseboards and/or plinths to the subfloor. Where flash type cove base is specified, install wood nailing strip in the wall as specified and flush with finished walls.

7. Scraping and Sanding

Scrape and/or sand all uneven areas in the wood flooring to make suitable for application of the resilient flooring.

ITEMS FOR MASONRY SECTION

1. The surface of all concrete floors (specify areas) as well as the treads, landings, and platforms of stairs (specify location) shall be steel troweled to a smooth, even, level, hard surface, free from expansion joints, scale, or foreign deposits. The use of concrete hardeners, magnesite and cinder-filled concrete should be avoided.
2. Concrete subfloors shall be brought to a smooth, even surface a sufficient distance below the finished floor level to allow for the installation of the resilient floor.

ITEMS FOR PLASTERING SECTION

1. (Where Cove Base of either type is used.) All plastering on walls (specify areas) shall be made smooth, even, and free from imperfections and shall be carried to the subfloor.

Complete Installation Specifications Available

Complete Unabridged Installation Specifications for all of the various Armstrong Floor, Wall, and Counter-Top Materials may be had upon request from any Armstrong Floor Division District Office.

A. I. A. File No. 23-G

Specifications for Installing Armstrong Asphalt Tile
Specifications for Installing Armstrong Cork Tile
Specifications for Installing Armstrong Corlon with Armofelt Back
Specifications for Installing Armstrong Corlon with Cushion-Eze Back
Specifications for Installing Armstrong Corlon with Hydrocord Back
Specifications for Installing Armstrong Custom Corlon Tile
Specifications for Installing Armstrong Excelon Tile
Specifications for Installing Armstrong Linoleum
Specifications for Installing Armstrong Linoleum with Cushion-Eze Back
Specifications for Installing Armstrong Linotile
Specifications for Installing Armstrong Rubber Tile

A. I. A. File No. 23-L

Specifications for Installing Armstrong De Luxe Corkwall
Specifications for Installing Armstrong Plastic Surfacing
Specifications for Installing Armstrong Vinyl Wall Tile

A. I. A. File No. 23-Q

Specifications for Use of Armstrong Underlayments

A. I. A. File No. 35-C-12

Specifications for Installing Armstrong Counter Tops

Abridged specifications for walls

These Specifications Cover Installations of Armstrong De Luxe Corkwall, Armstrong Plastic Surfacing, and Armstrong Vinyl Wall Tile.

BRIEF SPECIFICATIONS

Furnish and install Armstrong De Luxe Corkwall, Armstrong Plastic Surfacing, or Armstrong Vinyl Wall Tile in the colors, patterns, and designs as herein specified, on the areas listed below, or where shown on the accompanying drawings. (*List areas here.*) All products covered by these specifications are to be installed in accordance with the latest edition of Armstrong specifications by a qualified Armstrong contractor whose bid shall include all the labor and materials required.

NOTE: *Do not install Armstrong De Luxe Corkwall, Plastic Surfacing or Vinyl Wall Tile in shower stalls. Armstrong Plastic Surfacing is the only one of these three wall covering materials recommended for installation in built-in bathtub recesses where there are showers. Where Plastic Surfacing is used under these conditions, install special plastic cove material as recommended by the manufacturer.*

COMPLETE SPECIFICATION

SPECIFICATIONS FOR THE WALL COVERING CONTRACTOR

1. Work Included

The contractor shall furnish all labor and materials required to complete the wall covering work as specified.

2. Work Excluded

- a. Plaster patching and repairs. (Include only when it is desired to have the work done by another contractor.)
- b. Heat maintained at 70°F. and room properly ventilated.

MATERIALS

3. Wall Covering

a. Corkwall shall be:

- (1) Corkwall as manufactured by Armstrong Cork Company, or
- (2) first-quality material, $\frac{1}{8}$ " thick and made from a selected grade of pure cork, homogeneous from face to back, free from any foreign fillers and thoroughly and evenly bonded with an added heat-processed clear or colored resinous binder. The tile shall be accurately cut with square, true edges and be uniform in thickness.

b. Plastic Surfacing shall be:

- (1) Plastic Surfacing as manufactured by the Armstrong Cork Company, or
- (2) first-quality material composed of vinyl resins, alkali resisting color pigments, and other plastic compounds, all thoroughly mixed to form a dimensionally stable, stain-resistant wall covering. It shall be dense, but resilient and highly resistant to abrasion. It shall be in roll or sheet form, and shall have a supporting back which resists the effects of water, alkali, and mold.

c. Vinyl Wall Tile shall be:

- (1) Vinyl Wall Tile as manufactured by the Armstrong Cork Company, or
- (2) first-quality material, a thoroughly blended vinyl composition. It shall be dimensionally stable, fire-resistant, and completely resistant to alkali, grease, and oils. The tiles shall be uniform in thickness and accurately cut with square edges. It shall have the Underwriters' Laboratories, Inc., Fire Hazard Classification as follows:

Flame spread—15
Fuel distributed—10-15
Smoke density—0-25

Color (*always specify by number to avoid confusion*) and trim shall be (wood, metal, resilient floor or wall covering cap strip, or other).

4. Adhesives

Adhesive for Armstrong De Luxe Corkwall shall be Armstrong S-245 Top-Set Cove Base Cement. Adhesive for Armstrong Plastic Surfacing shall be Armstrong S-127 Cement. Adhesive for Armstrong Vinyl Wall Tile *must* be Armstrong S-1225 Cement, a requisite for compliance with Underwriters' Laboratories, Inc., Fire Hazard Classification; or Armstrong S-245 Top-Set Cove Base Cement where no fire hazard classification is specified.

5. Samples

- a. Labeled samples must be approved by the architect.

INSTALLATION

6. Installation

Install (*Specify material: De Luxe Corkwall, Plastic Surfacing, or Vinyl Wall Tile*) in accordance with manufacturer's installation specifications over (*state whether plaster, plasterboard or other*) which the contractor shall inspect before starting the work. Notify the architect in writing of any defects in the wall. Do not proceed until such defects have been corrected.

7. Preparation of Surfaces

- a. New plaster should be white coated and thoroughly dry.
- b. Remove existing wall covering, paint, etc., from walls.
- c. Size dusty or porous plaster and cardboard face of plasterboard with Armstrong S-140 Floor and Wall Size.

8. Metal Trim

Apply metal trim, wood molding, or resilient cap strip, if specified, at wainscot top. Install metal, resilient cap strip, or wood-crowned molding at juncture between ceiling and wall line.

9. Guarantee

The contractor shall guarantee that all work executed under this section of the specification will be free from defect in materials or workmanship, provided that any such defect is brought to the attention of the contractor in writing within one year after completion of the work. Upon such notice, the contractor shall, at his own expense, make the necessary repairs or replacements of the defective work in question. The owners shall, however, be responsible for the removal and replacement of all fixtures and equipment which might interfere with the work to be done.

ITEMS FOR THE CARPENTRY SECTION

1. Wallboard

- a. Wallboard shall be inch thick plasterboard, of gypsum faced with smooth cardboard and shall have recessed edges for the application of tape over joints.
- b. Wallboard shall be nailed to studs and cross-headers. Install headers 2 feet to 3 feet on centers between studs. Nails shall be set and holes filled. Sand smooth.
- c. Size all patches and dusty and porous plaster with Armstrong S-140 Wall Size.
- d. If plaster is in too poor condition to repair, remove and replace with new plaster or approved wallboard.
- e. Remove existing wall covering, paint, etc., from walls.

ITEMS FOR THE PLASTERING SECTION

1. General

Walls shall be brought to a smooth, even surface free of trowel marks or other defects.

2. New Plaster

- a. In rooms where De Luxe Corkwall, Plastic Surfacing, or Vinyl Wall Tile is to be installed, finish walls with a smooth, well-bonded white coat.
- b. Walls shall be free of "hot" spots which might tend to "burn" adhesive or wall covering.
- c. Make all inside and outside corners plumb and square.

3. Old Plaster

Patch all cracks and holes and sand to a smooth, level finish when dry and hard.

NOTE: *If plaster cannot be repaired, remove and replace with new plaster.*

Counter tops — materials and installation

Armstrong Plastic Surfacing is a new vinyl-resin material, highly recommended for sink and counter tops and wall surfaces. It is not easily harmed by hot soapy water, cleaning detergents, or other normal reagents. Damage to the material can be readily repaired, accidental cuts can be sealed with a soldering or welding technique. Slight burns or scorches can be removed with steel wool.

Armstrong Corlex is a new high-pressure laminate, also highly recommended for sink and counter tops or wall surfaces. Corlex has a wide application for commercial and institutional areas where surfaces must resist severe wear and staining. The decorative, easy-to-clean plastic surface is extremely durable and resistant to heat, stains, and scratches.

Armstrong Sheet Corlon and Armstrong Linoleum are also recommended for tables, counter tops, and other areas where a smooth working surface is required.

Installation

In any areas where water is splashed, the success of the installation of counter-top materials depends almost entirely upon making the seams and edges tight and waterproof. Moisture must not be allowed to get under the

material into the plywood and loosen the adhesive bond.

Good construction at the basin requires the use of compression-type sink rims and the proper type of metal edgings. Manufacturers of most of these items recommend a particular type of construction for use with surfacing materials. Names of firms making metal edgings will be furnished upon request.

Preparation of Surfaces. The base surface must be absolutely clean. All paint, varnish, felt, and old adhesives should be removed by sanding or by the use of paint remover or safe cleaning fluids. Holes and cracks should be filled with plastic wood and sanded smooth when dry. Badly warped or decayed wood and delaminated plywood should be replaced with new $\frac{3}{4}$ " exterior plywood, grade BC (Utility) or better.

Adhesives. Use Armstrong S-290 Waterproof Sink-Rim Cement to seal all seams and edges. Use waterproof caulking compound with compression-type rims or over-the-top metal edging. Install Plastic Surfacing with Armstrong S-127 Cement. Install Corlex with Armstrong S-1200 Corlex Cement. Install Linoleum and Corlon with Armstrong S-127 Cement; install Armstrong S-150 Lining Felt with Armstrong S-128 Paste or S-127 Cement.



This residential installation demonstrates the adaptability of Armstrong Plastic Surfacing to wall, as well as sink and counter-top, use. This flexible plastic surface can be formed into attractive roll-type counter edges with no extra material cost.

Preparing old subfloors for resilient flooring

With the continuing importance of modernization projects, resilient flooring materials offer the simplest means of utilizing the previous floor construction. However, no resilient floor is better than the subfloor over which it is installed, and satisfactory results depend to a very great degree on correct preparatory work.

The installation of resilient floors in an old structure usually involves the conversion of what was once a wearing floor into a subfloor. Two main conditions must be met before such a floor forms a satisfactory base for a resilient finish floor. First, it is necessary to have a relatively smooth-surfaced subfloor, free from serious irregularities which would mar the appearance of the finish floor. Second, since nearly all resilient floorings are applied with adhesives, the old floor must be so prepared as to provide a satisfactory bonding surface for the adhesive.

Wood floors. The preparation of old wood floors for the installation of resilient flooring depends on the type of construction:

1. Single wood floors, not tongue-and-groove or tongue-and-groove flooring having more than 4" face width, should be covered with $2\frac{5}{32}$ " flooring or $\frac{1}{2}$ " or heavier plywood. (For details of both wood and mastic type underlayments see pages 37 and 38.)
2. Single wood floors, tongue-and-groove (not over 4" face width). Use hardboard, such as Armstrong Temboard Underlayment or $\frac{3}{8}$ " plywood, grade BD or better.
3. Double wood floors. If boards are 3" wide or more, proceed as (2), above. If less than 3", renail loose boards and replace defective or badly worn boards with new material. Fill cracks and holes with plastic

wood or snugly fitting wood pieces. Remove surface irregularities, such as cupping, by sanding.

Wood floors, which are too uneven to be sanded smooth, should be covered either with hardboard, $\frac{3}{8}$ " or heavier plywood, or a mastic-type floor fill made with Armstrong No. S-170 Flormastic.

Old wood floors to which a surface treatment, such as paint or oil, has previously been applied present a special problem. Such treatments tend to prevent the penetration of the adhesive into the wood and deprive it of bonding strength. All traces of oil or paint should be removed by sanding or scraping.

When the pores of any wood floor have been opened by sanding, too much penetration of moisture from the adhesive causes cupping of the floor boards. Immediately after sanding, therefore, a sealing compound such as Armstrong S-140 Floor and Wall Size should be applied and allowed to dry before spreading adhesive.

Concrete floors. The problem of securing proper adhesion to concrete subfloors usually arises from dusty, chalky, or flaky concrete surfaces and previous treatments with oils or other solutions. This can usually be overcome by (1) thorough sweeping with a wire brush to remove all loose particles, and (2) removal of grease and oils and/or other surface coatings such as paint, varnish, or wax. These can be removed by sanding, paint and varnish remover, blowtorch, acetylene paint burner, or a strong solution of tri-sodium phosphate and water followed by a sealing treatment. When asphalt tile or Excelon Tile is to be installed, the sealer should be Armstrong No. S-80 Asphalt Primer. For all other resilient flooring materials on suspended concrete floors, apply Armstrong S-140 Floor and Wall Size. All cracks, minor holes, and crevices should be filled with Armstrong Crack Filler or a filler of equal quality before any resilient flooring installation is started. If concrete floors are too badly damaged to be repaired by crack fillers, the entire floor may be resurfaced with a fill made from Armstrong S-170 Flormastic, S-105 Underlayment Cement, or a concrete topping. Concrete topping and new concrete floors must be fully cured before installing resilient floors.

Special conditions. The above comments cover the most common conditions encountered in dealing with subfloors of wood and concrete. Other types of subfloors such as metal, terrazzo, and magnesite require special treatment which is dependent on individual circumstances. In such cases Armstrong will be glad to offer specific assistance.

Preparing old wood subfloors

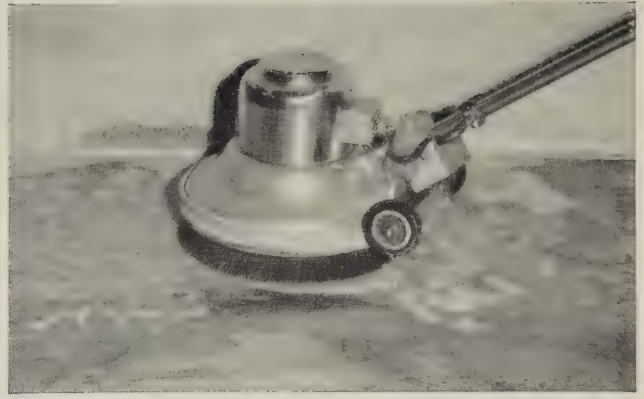
Type of Subfloor		Hardboard	Plywood*
Single wood floor	Tongue-and-Groove	✓	$\frac{3}{8}$ " or heavier
	Not Tongue-and-Groove	Do not use	$\frac{1}{2}$ " or heavier
Double wood floor	Strips 3" or more	✓	$\frac{3}{8}$ " or heavier
	Strips less than 3"	Renail or replace loose boards. Remove surface irregularities.	

Floors too uneven to be sanded smooth: hardboard, or $\frac{3}{8}$ " or heavier plywood, or S-170 Flormastic.

* See page 38 for recommended types.



To insure a proper bond for the adhesive, all paint must be removed. Because it helps to speed the removal of paint from large areas, the propane gas paint burner is often preferred for this type of work. However, machine sanding and chemical paint removers also do the job quickly and effectively.



Grease or oil coatings should be removed with a strong solution of tri-sodium phosphate or alkaline cleanser. Cleaning solutions should be thoroughly rinsed away. Where deep penetration of grease or oil cannot be removed from the subfloor, the installation of resilient flooring should be questioned.



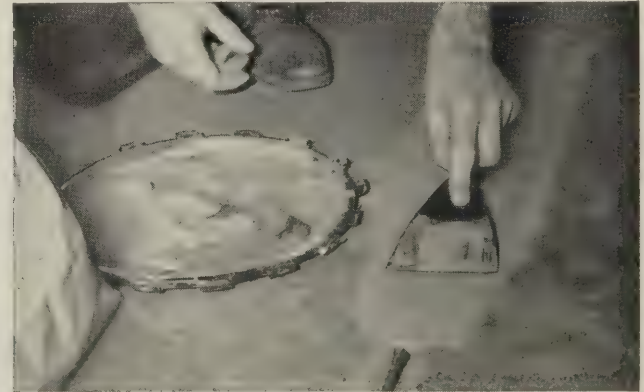
Surface defects in the old double floors often damage or mar the finished resilient floor. This can be prevented by carefully renailling loose boards and sanding or planing warped areas to floor level. All badly damaged floor boards should be replaced. Sanded areas should be treated with No. S-140 Floor Size.



An underlayment, consisting of four-by-four-foot sheets of hardboard or plywood, is advised for uneven subfloor areas which cannot readily be corrected by sanding. When laid over a tongue-and-groove floor, this underlayment provides a sound and economical base for all types of resilient flooring.



Another method of resurfacing damaged wood and concrete subfloors is the use of a cold mastic floor fill. It can be laid directly over the old floor. Wood screeds and a straightedge may be used to maintain the thickness necessary for leveling. Cold mastic fills will not adhere to subfloors treated with oil.



Although resilient flooring adhesives will fill minor cracks and crevices in concrete subfloors, it is best that all holes, cracks, and crevices be filled with a reliable cement crack filler before installation is started. It is important that all concrete subfloors be allowed adequate drying time before installing flooring.

Satisfactory resilient flooring installations often depend on . . .

Selecting the right type of underlayment

Resilient flooring materials all tend to mold themselves somewhat to irregularities of the surface over which they are installed. This tendency, in addition to the more or less severe seasonal expansion and contraction of subfloors, makes it extremely important that the proper type of underlayment for the particular conditions is used. It is equally important that the underlayment is installed properly. Otherwise, the resilient finish floor may lose some of its attractive appearance or even split.

There are two main types of subfloor to be considered—concrete (or other monolithic floors, such as terrazzo, ceramic tile, or steel) and wood—and two main types of underlayment—board and mastic. Board-type underlayments are generally used to resurface wood floors. Mastic-type underlayments are used to level concrete subfloors.

Mastic-type underlayments. Mastic underlayments are of several kinds. The best use a binder such as asphalt or latex in the mix. Those which consist simply of a powdered mixture such as cement, gypsum, and sand, to which only water is added, all too often break down under traffic when applied in thin coats or featheredges. For some installations, either type will be satisfactory, but the latex-type underlayment, such as Armstrong No. S-105 Chemical-Set Underlayment Cement, is best where a thin fill is required. For best results, the maximum thickness is up to, but not more than, $\frac{1}{8}$ ". Any thickness greater than $\frac{1}{8}$ " should be applied in two or more applications.

Over wood subfloors, galvanized chicken wire or expanded metal lath should be nailed to the floor to reinforce asphaltic-type underlayments. The wire netting allows the wood floor to expand and contract without damaging the floor fill.

It is easily troweled and can be featheredged very satisfactorily. It can be installed under most normal conditions, including installation over radiant-heated subfloors. However, latex underlayment should not be used when a solvent-type asphalt adhesive such as Armstrong S-80 and S-90 will be used to install the resilient floor.

The recommended asphaltic-type underlayment is made with Armstrong Flormastic, an asphaltic compound, mixed with Lumnite cement and aggregates, is both inexpensive and satisfactory under any normal conditions, including installations over radiant-heated subfloors. Except for occasional spots to be featheredged, the fill should be at least $\frac{3}{8}$ " in thickness. However, Flormastic should not be used when the resilient flooring is to be installed with No. S-104 Cement.

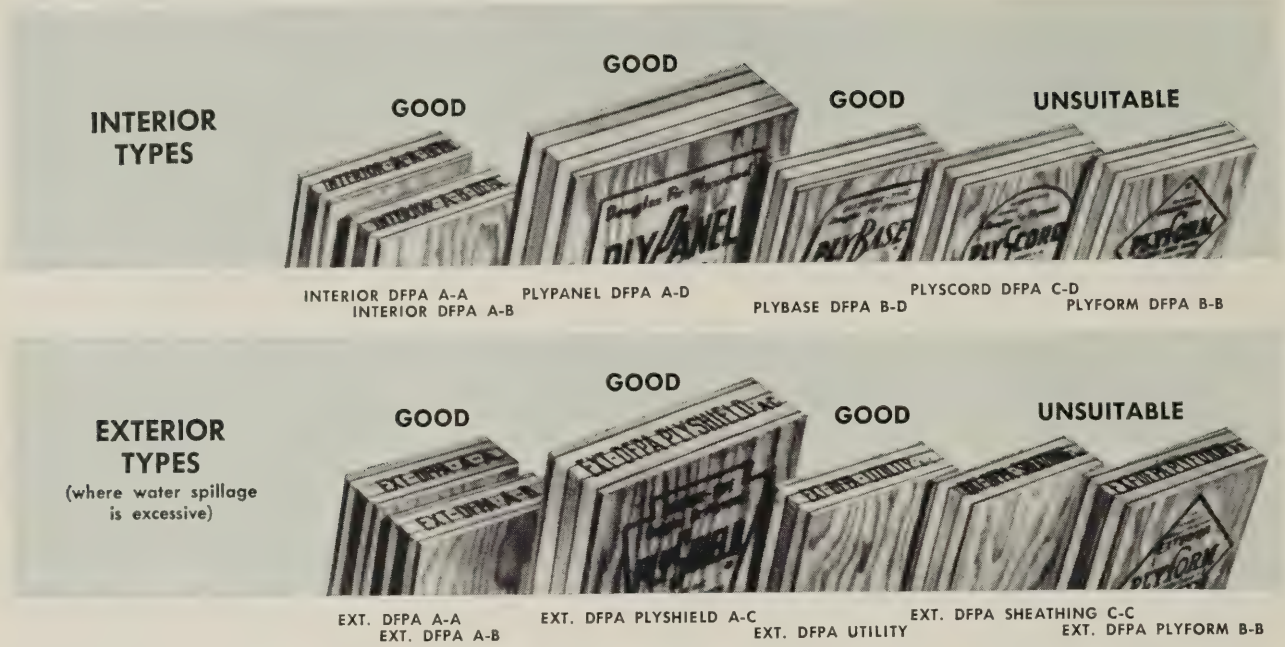
It is important to remember that the subfloor must be free from surface treatments such as paint, oil, and varnish before a mastic-type underlayment is applied.

Board-type underlayments. The basic choice here is between hardboard and plywood. In most cases, it has proved satisfactory to use hardboard on remodeling work and plywood on new construction. The main reason for this is that the thinner hardboard type of underlayment avoids excessive building up of old subfloors. In new construction, on the other hand, it is often desirable to build up subfloors, and plywood serves this additional purpose well.

A latex underlayment such as Armstrong S-105 Chemical-Set Underlayment Cement may be troweled to a thin "feather-edge" in leveling worn or damaged areas of concrete subfloors. This often eliminates the need for complete resurfacing.



Suitability of plywood (DFPA) underlayments



Hardboard. The most suitable type of hardboard underlayment for wood subfloors is Temboard Underlayment, as recommended in Armstrong Specifications. This hardboard has been in use for many years as an underlayment for resilient floors and has proved satisfactory. Tempered hardboards should never be specified as underlayments for resilient flooring.

Plywood. This material has been used satisfactorily as an underlayment for many years. The general term "plywood," however, should always be qualified in underlayment specifications. Only eight of the twelve types of plywood available are suitable as underlayment. Among

interior plywoods, grades such as AA, AB, AD, and BD are recommended, with AD preferred for cost and performance. Grades CD and BB should not be used.

Among exterior plywoods, grades AA, AB, AC, and BC are recommended, with AC preferred for both cost and performance. CC and BB should not be used. A 3/8" or greater thickness should be used in all cases. (See chart.) As a general rule, interior plywoods are used because of lower cost, although exterior plywoods are recommended wherever excessive water spillage occurs, such as around soda fountains, at the entrances of public buildings, and on counter tops.

Joint spacing of 1/32" to not over 1/16" should be provided between sheets of hardboard or plywood underlayment to permit slight expansion and contraction with varying moisture conditions. The sheets should be laid with joints staggered.

Hardboard or plywood should be firmly fastened to the subfloor with coated or ring-grooved nails or approved staplers. Fasteners must not be over 4" o.c. in all directions and at edges and driven flush or 1/32" below the underlayment surface.



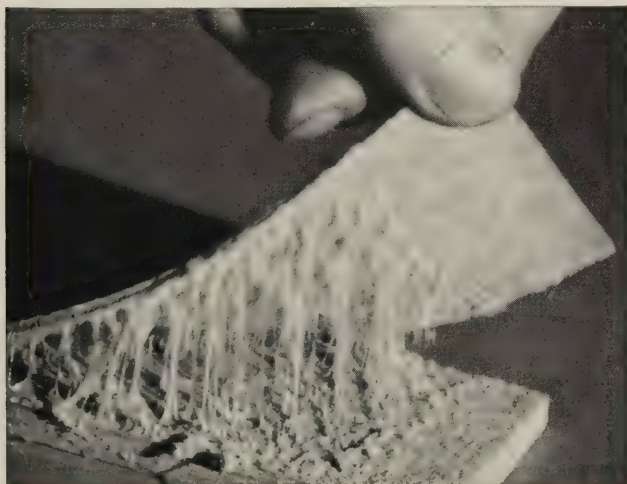
Adhesives for resilient flooring

The life and serviceability of any resilient flooring installation depend greatly upon the proper application of the correct adhesive which will meet its specific installation requirements. Frequently, the selection of the proper adhesive is as important as the selection of the floor itself. To bond properly, the adhesive must hold the flooring material to the subfloor by surface attachment. While the bonding strength must be great enough to prevent the separation of the flooring material from the subfloor under stresses slightly greater than those encountered in normal use, it must not be so strong that it will be too difficult to remove the resilient flooring later if necessary.

Factors to Be Considered

The type of subfloor, its condition, and the kind of resilient flooring material to be installed are important factors in the selection of the adhesive. Below-grade subfloors, for example, may require a different type of adhesive than suspended subfloors, and asphalt tile must be installed with a different adhesive than linoleum. The adhesive selected must also bond the resilient floor securely to the subfloor without chemical or physical damage to the flooring material. It should also be easy to handle and apply. It should develop and retain the correct "tack" or gripping power throughout the desired working period. The adhesive must have correct viscosity. If it is too thin, it will penetrate too deeply into the subfloor or the material and the bonding power will break down due to lack of sufficient adhesive at the surface.

The bonding strength of any adhesive is determined by its cohesive strength as well as its adherence to both materials being bonded. The test below shows integral cohesion and adhesion between the subfloor and the flooring material.



For this reason, resilient flooring adhesives should never be thinned except as specified by the manufacturer.

Because the various types of resilient floors available are designed to meet specific flooring requirements, it is necessary that the adhesive used in their installation meet the same requirements. As a guide in the proper selection of adhesives, the Armstrong Research and Development Center has prepared the chart shown on page 40.

Armstrong No. S-128 Paste is an all-purpose adhesive developed for the installation of lining felt, linoleum, linoleum tile, and sheet Corlon with felt or Cushion-Eze Back. It should be used only on suspended subfloors. It has a sulphite liquor base and is water soluble.

Armstrong No. S-130 Resilient Tile Paste was formulated especially to simplify and speed the installation of Linotile, rubber tile, cork tile, Custom Vinyl Cork Tile, linoleum tile, and Custom Corlon Tile, over suspended subfloors. It develops a quick tack and keeps tiles from sliding or moving while mechanics work over finished areas.

Armstrong No. S-235 On-Grade Cement is a latex-type cement which is both alkali and moisture resistant. It is designed for the installation of sheet Corlon with Hydrocord Back as well as rubber tile and Custom Corlon Tile over dry, well-cured on-grade concrete floors. It should not be used below grade.

Armstrong No. S-80 Primer is used to minimize moisture as well as to seal porous and dusty concrete sub-

To insure adhesives of uniform quality, the Armstrong Research Laboratories continually test the bonding strength of adhesives before and after "setting." The "stripping test," below, measures the bonding strength of the adhesive after setting.

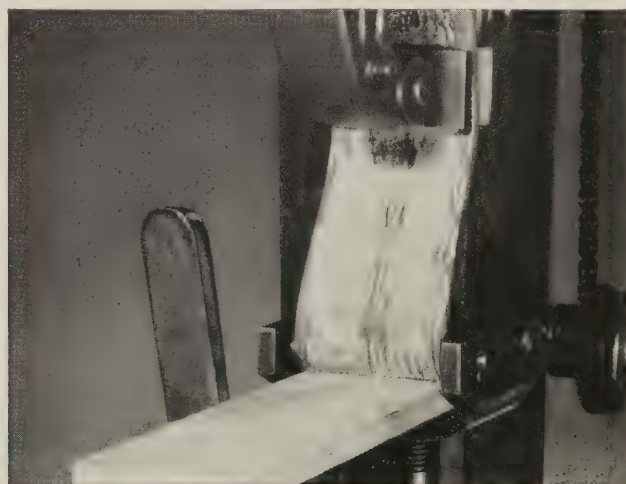


Table of recommended adhesives for the installation of Armstrong resilient floors

Type of Resilient Floor	Wood, Hardwood & Plywood	Concrete Suspended	Concrete On Grade	Concrete Below Grade	Ceramic Tile, Terrazzo or Marble Suspended	Ceramic Tile, Terrazzo or Marble On Grade	Steel	Magnesite	Floor Fill	
									Asphalt Type (Suspended)***	Latex Type (Suspended)
Linoleum Sheet Corlon (with Armofelt or Cushion-Eze Back)	S-128	S-128	Don't Install	Don't Install	S-214 or S-235	Don't Install	S-214 or S-235	Obtain Special Recommendation from Armstrong for Individual Projects	S-128, S-214 or S-235	S-128, S-214 or S-235
Sheet Corlon with Hydrocord Back	Use Corlon with Armofelt or Cushion-Eze Back		S-235	Don't Install	Use Corlon with Armofelt or Cushion-Eze Back	S-235	S-235		Use Corlon with Armofelt or Cushion-Eze Back	
Linotile	S-130	S-130	Don't Install	Don't Install	S-214, S-104 or S-235	Don't Install	S-104, S-214 or S-235		Install Lining Felt with S-214 Install Tile with S-130	S-130, S-214 or S-235
Rubber Tile and Custom Corlon Tile	S-130	S-130	S-104** or S-235	S-104	S-104 or S-214	S-104	S-104 or S-214			S-130, S-214 or S-235
Cork Tile and Custom Vinyl Cork Tile	S-130 or S-214	S-130 or S-214	S-214*	Don't Install	S-214	S-214*	S-214			S-130 or S-214
Linoleum Tile	S-130 or S-128	S-130 or S-128	Don't Install	Don't Install	S-214 or S-235	Don't Install	S-214 or S-235			S-130, S-128 or S-214
†Asphalt Tile and ½" Excelon Tile	S-160	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-80 Primer, and S-160 or S-90	S-160	S-160
Conductive Asphalt Tile	S-160	S-160 or S-90	S-160 or S-90	Don't Install	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-80 Primer and S-160 or S-90	S-160	S-160
Service Gauge Excelon Tile	S-700 or S-160	S-128, S-130, S-90 or S-700	S-90 or S-700	S-90 or S-700	S-90 or S-700	S-90 or S-700	S-90 or S-700	S-80 Primer and S-90 or S-700	S-214, S-160 or S-700	S-128, S-130 or S-700
Lining Felt*	Must for ½" bur-lap back linoleum and most resilient tiles. Optional for all other sheet linoleum and Corlon, ½" Excelon and asphalt tile.	Optional for all floors. Install with S-128	Don't Install	Don't Install	Optional for all floors. Install with S-214 or S-235	Don't Install	Optional for all floors. Install with S-214	Special Recommendation by Armstrong	Recommended for all resilient tile except asphalt and Excelon Tile. Install with S-214	Optional for all floors. Install with S-128 or S-130

NOTE: S-1200 Corlex Cement should be used to install rubber cove base. S-245 Top-Set Cove Base Cement should be used to install asphalt cove base.

†Dusty and porous concrete subfloors should be primed with No. S-80 prior to the installation of asphalt tile or both types of Excelon Tiles with S-90 or S-160. Asphalt tile and ½" Excelon Tiles should be installed over lining felt on wood subfloors. S-80 Primer should not be used with lining felt. Where asphalt tile and both Excelon Tiles are installed direct to plywood or hardboard, it is necessary to use S-80 Primer.

*All cork tile may be specified for certain grade-level installations where the floor surface of the concrete slab is at least 12" above grade level and the

ground slope is away from the building. The subfloor should be well cured and visibly dry. The cork tile shall be installed with No. S-214 Waterproof Cement.

**Where the concrete slab is new and not completely cured or abnormal conditions exist, No. S-104 Chemical-Set Cement should be specified.

***For asphalt tile and Excelon Tile over on- or below-grade asphalt type floor fill, use S-160 Emulsion.

•S-149 Lining Felt when used with Linotile, rubber tile, Custom Corlon Tile, and cork tile (all types). S-150 Lining Felt when used with felt-backed linoleum and sheet Corlon; must for linoleum tile and felt-backed Corlon Tile.

floors for asphalt tile and ½" Excelon Tile installation. It also prepares the subfloor for the proper adhesive selected for the installation of asphalt tile or ½" Excelon Tile.

Armstrong No. S-90 Asphalt Cement is recommended for on- or below-grade installation of asphalt tile or Service Gauge or ½" Excelon Tile, especially if the subfloor is not fully cured or shows signs of dampness. It is a cut-back asphalt-type cement, resistant to alkali and moisture.

Armstrong No. S-160 Emulsion is an all-purpose adhesive for the installation of asphalt tile and Armstrong ½" Excelon Tile over suspended, grade-level, and below-grade subfloors. It is a water emulsion of asphalt and is resistant to both alkali and moisture.

Armstrong No. S-700 Brushing Cement is an asphalt-rubber-water dispersion. It is recommended for use only with Service Gauge Excelon Tile. It can be used on all

types of subfloors and eliminates the need for lining felt.

Armstrong No. S-104 Chemical-Set Waterproof Cement is a special-purpose adhesive developed for the installation of Armstrong Rubber Tile and Custom Corlon Tile over on- or below-grade concrete. It is also used to install certain floors to steel, terrazzo, ceramic tile, and other non-porous surfaces, and where excessive surface moisture is unavoidable. This adhesive consists of two elements, one a liquid, the other a powder, which are mixed on the job and must be installed within a specified time.

Special Problems

Frequently, unusual conditions such as extra-high alkalinity in concrete or magnesite subfloors will necessitate special adhesive recommendations. In such instances, Armstrong will gladly furnish additional information to help determine the proper adhesive for the specific need.

Inspecting resilient floor installations

Flooring installations usually call for no more than four inspections. First is the inspection of the subfloor prior to installation of the finish flooring. Then the materials should be inspected, followed by an inspection of the resilient floor during installation. Finally, the completed work should be inspected.

The following information, and the accompanying chart—which outlines the special factors requiring attention for various types of subfloors and finish floors—should be helpful in timing inspections.

Inspection of Subfloors

The condition of the subfloor has an important bearing on the appearance as well as the life and serviceability of a resilient floor. Subfloor inspection should be made immediately before the installation of the finish floor.

New concrete subfloors. It is important that all new concrete subfloors be thoroughly dry, clean, and cured to a hard, non-powdery finish. Dampness or a powdery surface will prevent effective bonding of the adhesive to the subfloor. Concrete subfloors should also be free of expansion joints, trowel marks, and other imperfections. A smooth subfloor is important, since irregularities will show on the surface of the resilient flooring material and high points will receive excessive wear.

Old concrete subfloors. Inspect for proper filling of holes, cracks, and the leveling of uneven areas. The slab should be thoroughly dry and free from oil, paint, varnish, dirt, and other foreign matter. (For methods of preparing old concrete subfloors for resilient flooring, see page 35.)

New wood subfloors. Where resilient floors are to be installed over new wood subfloors, it is important to check the construction specifications against the manufacturer's recommendations as to construction with single, double, tongue-and-groove flooring, or hardboard or plywood underlayments. (See page 37 for recommended underlayments.) Major changes from the manufacturer's recommendations may call for individual recommendations for the proper installation of the resilient floor selected. Armstrong representatives are always willing to provide assistance on such special recommendations for Armstrong resilient floors.

Old wood subfloors. All loose boards should be re-nailed and all badly worn or damaged boards replaced. Uneven areas should be sanded or properly filled with

a floor fill. Sanded wood floors should be sealed to prevent warping due to absorption of moisture from adhesives. All previous finishes, oil, dirt, and foreign matter should be completely removed. (This subject is treated in more complete detail on page 35.)

Inspection of materials. Before the flooring contractor starts the job, all resilient flooring materials to be used should be inspected for quality, color, and type as called for in the flooring contract. Particular attention should be given to the types of lining felt and adhesives to be used, especially if the contract agreement or the architectural specifications permit the use of underlayments and adhesives other than those recommended by the manufacturer.

Inspection of the Installation

Poor workmanship, such as careless cutting and fitting, is best corrected early in the job—and inspection of the resilient floor during installation can avoid costly repair and correction later.

One of the most important operations in the installation of linoleum, plastic sheet flooring, and the majority of resilient tiles is the “rolling” process. This should insure a smooth, even bond to the underlayment by getting rid of all air bubbles, ripples, and uneven areas. The time required for proper rolling should not be shortened in order to speed the completion of the job, as this operation is vital to a satisfactory installation.

In areas where marbleized, Spatter or patterned linoleum or Corlon plastic sheet flooring is being used, particular attention should be paid to seam matching.

In resilient tile installations, all tile edges should be tight to the floor, and joint lines should be symmetrical and even.

Inspection of Special Installations

The preceding paragraphs cover inspection details ordinarily encountered in checking resilient floor installations over wood and concrete subfloors. The inspection of resilient floors over other types of subfloors—such as magnesite and metal—or of floors employing special techniques—such as the use of metal strips in conjunction with resilient floors for decorative effect—is governed by individual circumstances. In such cases, it may be advantageous to call on Armstrong for assistance.

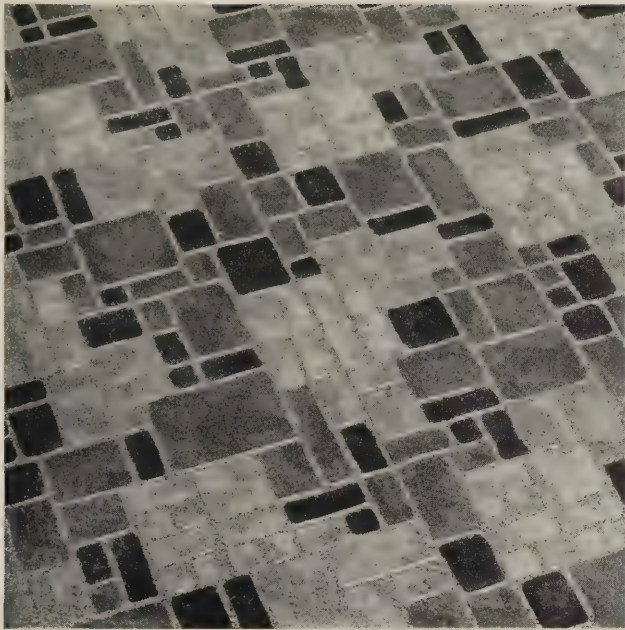
Factors important in resilient floor inspection

PRE-INSTALLATION INSPECTION

Type of Subfloor	Inspect for	Floor Should Be
NEW CONCRETE	Proper curing and drying. Moisture or dampness.	Free of expansion joints, and trowel marks, grease, dirt, or foreign matter. Free of imperfections. Hard, dry, and non-powdery.
NEW WOOD	Compliance with flooring specifications of maker as to construction in single, double, tongue-and-groove flooring or board-type underlayment.	Smooth, dry, and free from grease, dirt, or foreign matter.
OLD CONCRETE TERRAZZO CERAMIC TILE	Soundness, dryness, and necessary repair.	Level, free from cracks, holes, paint, varnish, and other finish. Also free from oil, dirt, and other foreign matter.
OLD WOOD	Renailing, replacement of worn or damaged boards, necessary filling of holes and cracks.	Sanded smooth, free of paint, varnish, oil, or other foreign matter.

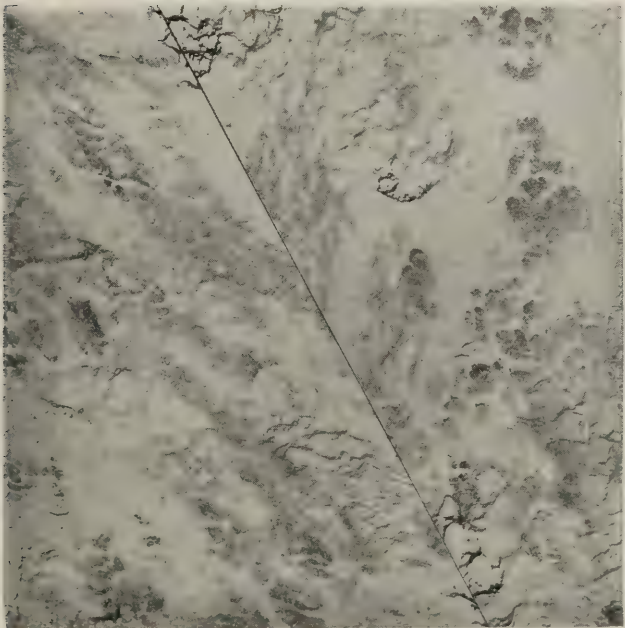
INSTALLATION INSPECTION

Type of Resilient Floor	Inspect During Installation for	Check Finished Floor for
LINOLEUM CORLON (Sheet type, all backings)	Proper installation of lining felt when required. Proper matching of pattern at seams. Neat cutting and fitting, around pipes and fixtures. Thorough rolling.	Over-all appearance. Air bubbles caused by poor rolling. Open seams. Proper cleaning and waxing.
ASPHALT TILE EXCELON TILE RUBBER TILE CUSTOM CORLON TILE CUSTOM VINYL CORK TILE LINOTILE LINOLEUM TILE	Symmetrical joint lines. Open joints. Poor tile laying such as adhesive between tile joints. Thorough rolling of rubber tile, Custom Corlon Tile, Custom Vinyl Cork Tile, linoleum tile, and Linotile. Neat cutting and fitting.	Over-all appearance. Raised joints. Open joints. Loose tile. Proper cleaning and waxing.
CORK TILE	Symmetrical joint lines. Proper finishing where unbeveled and unfinished cork tile are used. Thorough rolling.	Over-all appearance. Smooth surface. Open joints. Proper cleaning and special waxing.



An example of perfect workmanship in seam cutting and pattern alignment. Note how the over-all effectiveness of the floor design is greatly increased by proper matching of the repeat unit of the design. The floor in the photograph at left has a joint between two pieces of linoleum running diagonally from top to bottom through the center of the picture. The joint is barely noticeable because of excellent workmanship.

All joints or seam lines should be symmetrical. Uneven lines, such as illustrated at right, mar the appearance of both linoleum and resilient tile floors. This condition is more likely to occur in resilient tile installations. Armstrong resilient tiles are die-cut to a perfect square which eliminates this condition provided the flooring mechanic has squared the room before starting the installation and has laid the tiles carefully.



For the proper appearance of Marbelle, Royelle, Decoray, and Jaspé linoleum installations, the sheets should be "reversed" or turned end for end. This gives a continuous flow to the graining and eliminates the optical illusion of "raised seams," shown here. The same principle applies to Textelle and Spatter linoleum to assure proper pattern appearance.

Maintenance problems must be considered

Although the care of resilient floors often is believed to be outside the province of the architect or builder, serious problems can arise when maintenance is not taken into consideration. This is particularly true when the owner of a building is uninformed and proceeds with his own ideas of floor maintenance to the point where the floor is ruined. Maintenance requirements should be considered along with the type and amount of traffic to which the floor will be subjected. Excessive, uneconomical maintenance may result if an unsuitable floor is installed.

Armstrong representatives are always ready to offer any follow-through that may be needed to make certain that the owner of a new floor understands the maintenance required for its most satisfactory service.

Apart from their handsome appearance, one of the main reasons for the popularity of resilient floors is their ease of cleaning. They never need costly refinishing. Occasional washing and waxing, along with regular sweeping, are all the maintenance they normally require. However, resilient floors vary in the amount of care they need. For this reason, the easiest to maintain floors should be selected for areas, such as entrance ways, where service conditions are most severe.

Since the maintenance characteristics of the different types of resilient floors overlap, and maintenance is also affected by the color and pattern of the flooring selected, the following ranking is intended as an approximate guide to the maintenance required by the various Armstrong Floors. Those classed as "Superior" normally require the least care.

Superior Linotile
 Excelon Tile
 Custom Corlon Tile
 Custom Vinyl Cork Tile
 Linoleum and Sheet Corlon
 with Cushion-Eze Back

Linotile is considered the easiest to maintain of all the Armstrong Floors. Its exceptionally dense, tough composition makes it an excellent choice for heavy-traffic areas. Both Excelon Tile and Custom Corlon Tile are vinyl plastic floors with exceptional advantages from the standpoint of maintenance. Both provide unusual resistance to the harsh cleaners which are all too often used in spite of manufacturer's warnings.

Minimum maintenance is required for Armstrong Custom Vinyl Cork Tile because of its vinyl protection. Armstrong Linoleum and Sheet Corlon with Cushion-Eze Back also require minimum maintenance because the foam backing

keeps dirt from being ground into the surface of these materials.

In order to retain a lustrous finish, and to provide the added protection that waxing affords, Armstrong has always encouraged occasional careful applications of a high-quality wax, after washing, as the proper care for plastic floors of all kinds.

Excellent Corlon (Sheet form, felt backed)
 Linoleum (Felt backed)

Linoleum perhaps best typifies the years of popularity which resilient flooring materials have enjoyed for their ease and economy of maintenance. Regular sweeping and occasional washing and waxing are all that are required to keep linoleum in good condition. Armstrong Corlon, a sheet-type plastic flooring, offers the additional advantage of excellent resistance to common chemical reagents.

Good Rubber Tile
 Asphalt Tile

The smooth plate finish of rubber tile requires slightly more frequent maintenance than the floors described above if it is desired to retain the high gloss which adds so much to its beauty. Rubber tile also benefits from occasional buffing with No. 00 steel wool. This keeps the rubber in prime condition and helps preserve the finish. For its low cost, asphalt tile provides a floor that is remarkably economical to maintain. Careful cleaning and periodic waxing, especially in the first months after installation, will help assure easy maintenance.

Fair Cork Tile

Regular cork tile, without the vinyl protection as in Custom Vinyl Cork Tile, is not ordinarily recommended for heavy traffic areas and should not be installed where it will be subjected directly to tracked-in dirt. In areas of less severe traffic, cork tile is readily maintained by daily sweeping and occasional washing and waxing. In cases of excessive soiling, machine scrubbing or sanding and refinishing may be necessary.

The following recommendations for resilient floor care are the result of continuing research over a period of many years on all types of resilient floors.

Sweeping. Dirt tends to slip off easily from the smooth, lustrous surface of any resilient floor. Daily sweeping with a soft broom or dry mop will keep this type of flooring clean for long periods. Oil mops or oil-type sweeping compounds are not recommended.

Washing. "More floors are washed away than worn away," says an old adage in the flooring industry. Unless

they are subjected to unusual amounts of dirt, resilient floors should be washed infrequently. For all types, Armstrong Cleaner, manufactured especially for resilient floors, is recommended. New resilient floors should not be washed until the adhesive is thoroughly set—a period of at least four or five days for all resilient floors.

Waxing. As soon as a resilient floor has been allowed to dry after washing, it should be waxed. Most people have a tendency to use too much wax. A thick film of wax forms a crust on top, leaving a soft, gummy mass underneath. Dirt penetrates the crust and lodges in the soft wax, making the floor appear gray and dirty. It is much better to apply two thin coats than one thick coat. Paste waxes, which contain solvents such as naphtha or turpentine, should never be used on asphalt or rubber tile. The ideal wax for all resilient floors is a water-emulsion type such as Armstrong Linogloss Wax, which dries in less than 20 minutes to a hard, colorless finish that is lustrous but not shiny. Linogloss Wax is made especially for resilient floors. Armstrong Wax Clean also is excellent for maintaining all types of resilient floors.

Stain removal. The adjoining chart shows suggested methods of removing stains from all types of Armstrong Resilient Floors. It does not cover all types of blemishes, and the methods outlined may not remove all stains. However, they have proved to be the best and safest way to remove the most frequently encountered stains. Armstrong will gladly advise on any stain removal problem for which these methods do not prove fully effective.

Protection. An element in the care of resilient floors which is often overlooked, but adds greatly to their life and beauty, is the use of furniture rests. The function of a furniture rest is simply to extend the area over which the weight of furniture loads is distributed, and thus prevent indentation. The following table shows the recommended types of rests for various furniture weights.

Type of stain

Type of floor

	Linoleum Linotile Corlon	Asphalt Tile Excelon Tile Custom Vinyl Cork Tile	Rubber Tile Custom Corlon Tile Cork Tile	
Alcohol	2	1	2	2
Acids				
Alkalis				
Burns				
Drain Cleaners				
Ink	3	3	3	3
Iodine				
Lye				
Mercurochrome				
Metal				
Nail Polish				
Chewing Gum				
Paint	4	4	4	4
Varnish				
Tar				
Dry Cleaners				
Fruit Juices	1	3	3	1
Grease				
Shoe Polish				
Rubber Heel Marks	3 or 5	3	3	3 or 5

Methods of removal

1. Wash with Armstrong Cleaner, rinse, dry and wax.
2. Rub with No. 0 dry steel wool, rinse, dry and wax.
3. Rub with No. 0 steel wool dipped in Armstrong Cleaner, rinse, dry and wax.
4. Remove with putty knife, rub with No. 0 steel wool dipped in Armstrong Cleaner, rinse, dry and wax.
5. Rub lightly with cloth dipped in paste wax. Buff.

Recommendations for the selection of Armstrong Furniture Rests

Weight of fully loaded furniture	size of rest or cup required (specify by number)					Weight of fully loaded furniture	size of rest or cup required (specify by number)				
	Sheet Corlon and Linoleum	Linotile	Excelon, Asphalt Tile	Custom Corlon, Rubber Tile	Cork Tile		Sheet Corlon and Linoleum	Linotile	Excelon, Asphalt Tile	Custom Corlon, Rubber Tile	Cork Tile
Up to 50 lbs. per leg	NT-10 CT-100 CFT-300 CFT-301	NT-10 CT-100 CFT-300 CFT-301	NT-20 CT-200 CFT-400 CFT-401	NT-10 CT-100 CFT-300 CFT-301	NT-20 CT-200 CFT-400 CFT-401	150-200 lbs. per leg	NT-35 CT-350 NDC-6	NT-10 CT-100 NDC-6 CFT-300 CFT-301	NDC-325	NT-10 CT-100 NDC-6 CFT-300 CFT-301	NT-50 CT-500 NDC-225
50-100 lbs. per leg	NT-20 CT-200 NDC-6 CFT-400 CFT-401	NT-10 CT-100 NDC-6 CFT-300 CFT-301	NT-50 CT-500 NDC-7	NT-10 CT-100 NDC-6 CFT-300 CFT-301	NT-35 CT-850 NDC-6	200-250 lbs. per leg	NT-35 CT-350 NDC-6	NT-20 CT-200 NDC-6 CFT-400 CFT-401	NDC-325	NT-20 CT-200 NDC-6 CFT-400 CFT-401	NDC-225
100-150 lbs. per leg	NT-20 CT-200 NDC-6 CFT-400 CFT-401	NT-10 CT-100 NDC-6 CFT-300 CFT-301	NDC-225	NT-10 CT-100 NDC-6 CFT-300 CFT-301	NT-50 CT-500 NDC-7	250-300 lbs. per leg	NT-50 CT-500 NDC-7 NDC-125	NT-20 CT-200 NDC-7 NDC-125 CFT-400 CFT-401	NDC-325	NT-20 CT-200 NDC-7 NDC-125 CFT-400 CFT-401	NDC-325



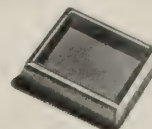
CT
Chrome
Furniture
Type



NT
Nail
Type



CT
Cotter
Type



NDC
Cup
Type

Summary of physical characteristics and comparative

FLOORING	FEDERAL SPECIFICATIONS	GAUGES	BASIC MATERIALS	WHERE TO USE	MAXIMUM STATIC LOAD LIMITS (LBS. PER SQ. IN.) BEARING SURFACE	RATING IN ORDER OF RESILIENCE (POTENTIAL UNDERFOOT COMFORT)
CORLON						
Decorseq	None	.070"	Vinyl Resins	Suspended	75	4
Armofelt Back	Evolved	.0625"	Vinyl Resins	On-Grade	75	4
Hydrocord Back						
Estate	None Evolved	.0625"	Vinyl Resins	Suspended	75	4
Granette	None Evolved	.070"	Vinyl Resins	Suspended	75	4
Mosaic						
Armofelt Back	None	.070"	Vinyl Resins	Suspended	75	4
Cushion-Eze Back	Evolved	.110"	Vinyl Resins	Suspended	75	1
Terrazzo						
Armofelt Back	None	.070"	Vinyl Resins	Suspended	75	4
Hydrocord Back	Evolved	.0625"	Vinyl Resins	On-Grade	75	4
LINOLEUM						
Embossed	LLL-F-471	.090"	Oleoresinous Compound	Suspended	75	4
Craftline	LLL-F-471	.090"	Oleoresinous Compound	Suspended	75	4
Jaspé	LLL-L-367	.125"	Oleoresinous Compound	Suspended	75	4
Marbelle	LLL-F-471 LLL-L-367	.070", .090", .125"	Oleoresinous Compound	Suspended	75	4
Newray	LLL-F-471	.070"	Oleoresinous Compound	Suspended	75	4
Plain	LLL-L-351b LLL-F-471, LLL-L-367	.090", .125"	Oleoresinous Compound	Suspended	75	4
Spatler, Felt Back	LLL-F-471	.090"	Oleoresinous Compound	Suspended	75	4
Cushion-Eze Back	None Evolved	.125"	Oleoresinous Compound	Suspended	75	1
Royelle	LLL-F-471	.090"	Oleoresinous Compound	Suspended	75	4
Decoray	LLL-F-471	.070"	Oleoresinous Compound	Suspended	75	4
Straight Line	LLL-F-471	.090"	Oleoresinous Compound	Suspended	75	4
Suburban	LLL-F-471	.090"	Oleoresinous Compound	Suspended	75	4
Textelle	LLL-L-367	.0125"	Oleoresinous Compound	Suspended	75	4
RESILIENT TILES						
Asphalt Tile (Standard and Greaseproof)	SS-T-306b SS-T-307	1/8", 3/16"	Asphaltic Compounds	Below-, On-Grade, Suspended	25	7
Conductive Asphalt Tile	None Evolved	1/8", 3/16"	Asphaltic Compounds	Powder Plants, etc. Suspended and On-Grade	25	7
Cork Tile	None Applicable	1/8", 3/16", 5/16"	Raw Cork and Resins	Suspended and On-Grade (See Page 40)	75	1
Custom Corlon Tile	L-T-751 (GSA-FSS)	3/32", 1/8"	Vinyl Resins	Below-, On-Grade, Suspended	200	2
Custom Vinyl Cork Tile	None Evolved	1/8"	Cork and Vinyl Plastic Resins	Suspended and On-Grade (See Page 40)	125	3
Excelon Tile	L-T-751 (GSA-FSS)	Service Gauge (1/16") and 1/4"	Plastic Asbestos Containing Vinyl	Below-, On-Grade, Suspended	25	6
Linoleum Tile	LLL-F-471	.065", .090"	Oleoresinous Compound	Suspended	75	4
Linotile	None Evolved	1/8"	Oleoresinous Specially Processed	Suspended Heavy Traffic	200	5
Rubber Tile	ZZ-T-301A	1/8", 3/16"	Rubber Compounds	Below-, On-Grade, Suspended	200	2
WALL COVERINGS						
De Luxe Corkwall	None Applicable	1/8"	Cork and Resin	Residential, Institutional, and Commercial Areas		
Plastic Surfacing	None Evolved	.045"	Vinyl Resins	Residential, Institutional, and Commercial Areas		
Vinyl Wall Tile	None Evolved	1/16"	Vinyl-Asbestos	Residential, Institutional, and Commercial Areas		
COUNTER TOPS						
Corlex	MIL-T-17171A (Ships)	1/16"	Plastic Laminate	Residential, Institutional, and Commercial		
Plastic Surfacing	None Evolved	.045"	Vinyl Resins	Residential, Institutional, and Commercial		
Linoleum	See Above	As Above	Oleoresinous Compound	Residential, Institutional, and Commercial		
Granette Corlon	None Evolved	.070"	Vinyl Resins	Residential, Institutional, and Commercial		

*Includes Cushion-Eze Back
(See Page 24)

Distribution—Armstrong floor, wall and counter-top materials are sold by flooring contractors and floor covering retailers. The names of reliable installers of Armstrong products in any locality can be obtained from any district or branch office of the Armstrong Cork Company.

costs of Armstrong floors, walls, and counter tops

SEE TABLE ON PAGE 23

THERMAL CONDUCTIVITY BTU/HR. SQ. FT. °F/IN. (SEE PAGE 14)	RELATIVE QUIETNESS	GREASE RESISTANCE	SURFACE ALKALI RESISTANCE	DURABILITY	APPROXIMATE† INSTALLED PRICE PER SQ. FT. OVER CONCRETE	EASE OF MAINTENANCE	LIGHT REFLEC- TIVITY
1.2 1.4	4	Excellent Excellent	Excellent Excellent	Excellent Excellent	45¢-50¢ 50¢-60¢	Excellent Excellent	
1.2	4	Excellent	Excellent	Excellent	30¢-40¢	Excellent	
1.2	4	Excellent	Excellent	Excellent	45¢-50¢	Excellent	
1.2 0.55	4 1	Excellent Excellent	Excellent Excellent	Excellent Excellent	45¢-50¢ 60¢-75¢	Excellent Superior	
1.2 1.4	4 4	Excellent Excellent	Excellent Excellent	Excellent Excellent	45¢-50¢ 50¢-60¢	Excellent Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	35¢-45¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	35¢-45¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	40¢-55¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	30¢-60¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	25¢-35¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	35¢-55¢	Excellent	
0.70	4 1	Excellent Excellent	Poor Poor	Good Good	35¢-45¢ 45¢-60¢	Excellent Superior	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	30¢-40¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	20¢-30¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	35¢-45¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	25¢-35¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	45¢-60¢	Excellent	
3.1	6	A & B Colors Poor; C & D Colors Fair; Greaseproof Asphalt Tile Excellent	Excellent	Excellent	20¢-45¢	Good	
4.0	6	Use Greaseproof Conductive Asphalt Tile	Excellent	Good	Variable—Depends on Installation Requirements	Good	
0.45	1	Fair	Fair	Good	45¢-90¢	Fair	
5.3	2	Superior	Excellent	Superior	70¢-90¢ Imperial Series and Plain Colors—95¢-§1.30	Superior	
0.73	3	Excellent	Excellent	Good	95¢-§1.30	Superior	
3.1	6	Excellent	Excellent	Superior	35¢-60¢	Superior	
Light Colors 1.7 Dark Colors 1.2	4	Excellent	Poor	Good	20¢-45¢	Excellent	
Light Colors 1.7 Dark Colors 1.2	5	Excellent	Poor	Superior	60¢-70¢	Superior	
5.3	2	Good	Good	Good	60¢-90¢	Good	
		Fair	Fair	Good	75¢-§1.00*	Excellent	
		Excellent	Excellent	Excellent	55¢-75¢*	Superior	
		Excellent	Excellent	Excellent	45¢-60¢*	Superior	

*Over sound plaster

† Prices—Since these Armstrong materials are sold and installed by others, it is impossible for Armstrong Cork Company to furnish complete information on the installed cost. Armstrong contractors in your own locality will be glad to furnish quotations on specific work without obligation.

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Color Values

For accurate color matching, it is recommended that actual samples of material be used. Because of color printing limitations, we cannot guarantee exact duplication of color values shown in this book with those of the actual goods.

SECTION TWO

1957 DESIGNS
and COLORS

Armstrong Linoleum is made in twelve distinct types. Each type is offered in a wide selection of designs and colors to meet almost any decorative requirement. Patterns range from unadorned plain colors to style effects of elaborate detail. The rich colors last the life of the material as they are inlaid and go all the way through to the backing.

For almost fifty years, Armstrong Linoleum has been accepted as the standard of quality among resilient flooring materials. Today, it is considered more than ever "The Modern Fashion in Floors" because of its high style and rich colorings. No other flooring material adapts itself so well to the design and color requirements of modern interior decoration. Any custom floor design that can be drawn can be effectively reproduced in one of the styles of Armstrong Linoleum.

In addition to its beauty and smart appearance, Armstrong Linoleum is a practical flooring, too. Its unusually smooth, virtually seamless surface is easy to maintain. Dirt does not easily adhere to its smooth surface. Spilled things, tracked-in dirt are quickly removed with a damp cloth. It's greaseproof, too. In addition, Armstrong Linoleum is resilient and quiet underfoot and has long been noted for its exceptional wearing qualities and easy care.

The logo features the word "Armstrong" in a bold, dark green, sans-serif typeface. To the left of the text is a circular emblem containing a stylized, light-colored 'A' that is partially obscured by the letter 'A' of the brand name.

LINOLEUM

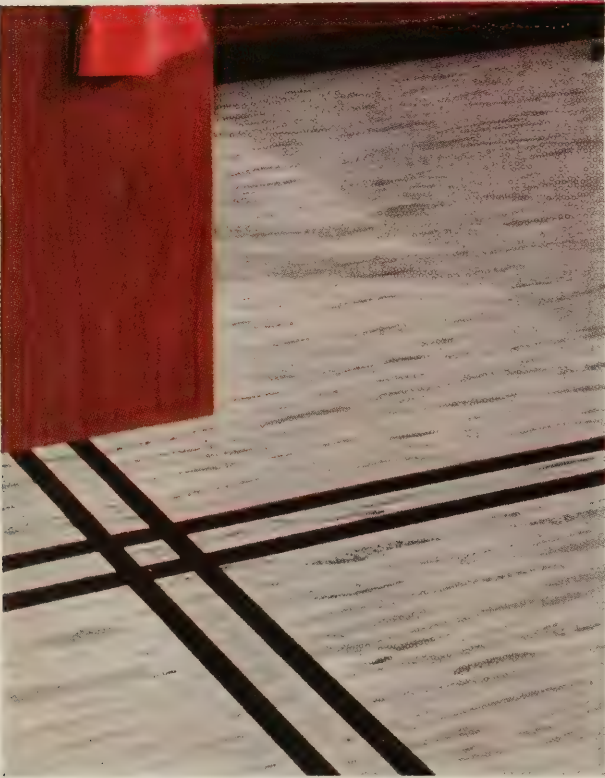
PLAIN Distinguished by its deep solid colors and its unusually smooth wearing surface. Color tones are related and contrasted for the greatest effectiveness in floor planning.	<i>see pages</i>	52-53
DESK TOP LINOLEUM Provides a smooth, wear-resisting work surface. Choose from five attractive colors.	<i>see page</i>	54
JASPE features a pleasing multitone striated graining which blends well with all types of interior design. The uniform graining makes seams practically invisible. In heavy gauge only. <i>see page</i>		55
DECORAY A smart floor styling noteworthy for its bold sweeps of color, in striated design. Styled and designed especially for residential interiors.	<i>see pages</i>	56-58
SUBURBAN A new budget-type standard gauge linoleum in marbled and striated patterns. Meets F.H.A. specifications for standard gauge inlaid linoleum.	<i>see pages</i>	59-61
MARBELLE This practical floor styling features a non-directional graining which tends to conceal tracked-in dirt. Recommended for residential and commercial floors.	<i>see pages</i>	62-65
ROYELLE A refreshingly different pattern distinguished by its large sweeping veins of color. It provides a fine background for interiors where a colorful atmosphere is desired. . . .	<i>see pages</i>	66-68
TEXTELLE In this exclusive Armstrong Linoleum design, closely related color tones are combined to produce a feeling of unusual depth in a large, yet softly textured flagstone effect. <i>see pages</i>		69-72
SPATTER Originally designed for colonial-type homes, Spatter Linoleum is now equally popular as a flooring in modern and traditional, residential and commercial interiors. For additional underfoot comfort, six Spatter patterns are available in Cushion-Eze Back.	<i>see pages</i>	73-76
CRAFTLINE INLAID presents a distinctive textured styling in molded linoleum which offers a delightful change in resilient floor design. In tweed and textured carpet effects. . . .	<i>see pages</i>	77-80
EMBOSSSED INLAID This popular styling is an Armstrong exclusive. Its effect is produced by depressing portions of the design so that others stand out in relief.	<i>see pages</i>	81-90
STRAIGHT LINE INLAID This Armstrong Linoleum style is noted for the clean-cut edges of the elements that make up the pattern. Available in two colorings.	<i>see page</i>	91
NEWRAY INLAID A new smartly styled flooring featuring geometric designs over a new "brush-stroked" background. Offers a custom-designed appearance at minimum cost. <i>see pages</i>		92-97



20 Brown heavy (1/8") and standard gauge



21 Evergreen heavy (1/8") and standard gauge

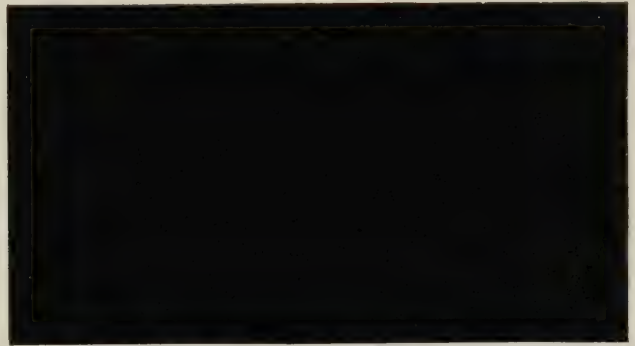


22 Dark Gray heavy (1/8") gauge only



25 Terra Cotta heavy (1/8") gauge only

Armstrong Plain Linoleum is distinguished by its smooth, even surface and deep uniform coloring. It is often used in areas where a striking single or contrasting color effect is desired; but more frequently it is used for special single color insets, feature strips, or borders to accent other types of linoleum floors. It is made in the five Regular or "battleship" colors shown here and in seven Special colors shown on page 53 in the gauges shown. The Special colors are slightly higher in price than the Regular colors.



27 Black heavy (1/8") and standard gauge

Armstrong PLAIN LINOLEUM



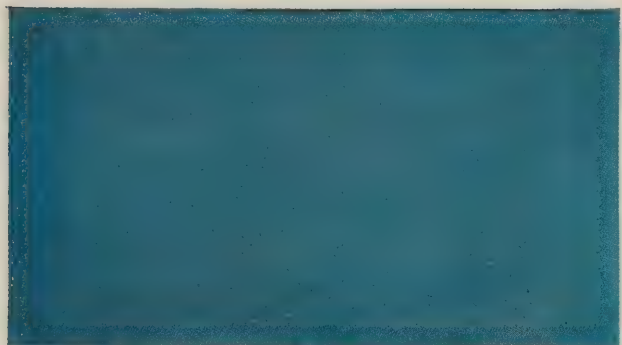
heavy (1/8") and standard gauge

White 23



standard gauge only

Pearl Gray 24



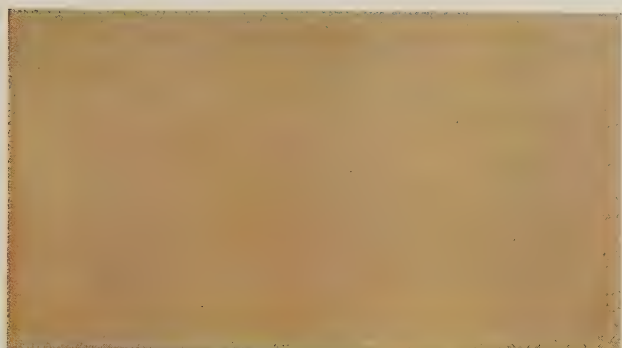
standard gauge only

Cerulean Blue 34



heavy (1/8") and standard gauge

Chinese Red 39



standard gauge only

Fawn 45



standard gauge only

Canary Yellow 48



standard gauge only

Pink 50

Armstrong Plain Linoleum is available in one-inch-wide Linostrips in all colors and listed gauges.

Border material in 6", 9", and 12" widths is available only in Plain Black. Also in black Marbelle 021. In addition, border material in any width ranging from 3" to 24" can be furnished to order in any available color or gauge of Plain, Jaspé, Decoray, Royelle, Marbelle, Suburban, and Spatter Linoleum in rolls up to 30 feet in length.

Armstrong PLAIN LINOLEUM



415 Blond Tan



416 Mist Green

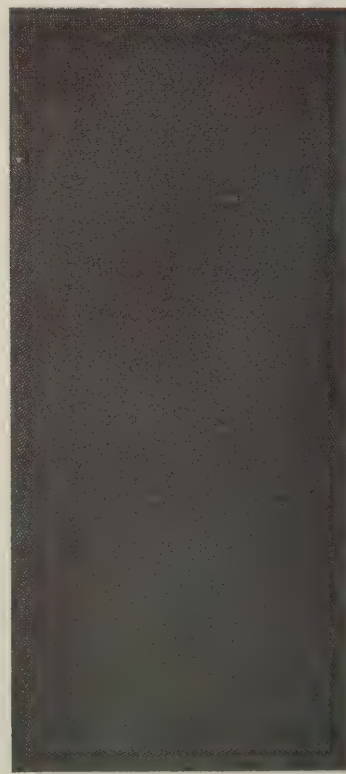


420 Brown

Armstrong Desk Top Linoleum is made for use on desks, tables, counters and other areas where a smooth, wear-resisting resilient work surface is needed. It has a satin-smooth finish, is lacquer-treated for easy maintenance. Armstrong Desk Top Linoleum is made in five colors—three plain patterns and two Jaspé stylings. The pastel Jaspé colorings were especially developed to combat eye fatigue. They lessen the light contrast between the desk top and paper work lying on it, and thus greatly reduce eyestrain. Armstrong Desk Top Linoleum is manufactured in rolls 2 yards wide and in .080" thickness.



421 Green



426 Gray

Armstrong DESK TOP LINOLEUM

2 yards wide



heavy (1/8") gauge

Apple Green 1



heavy (1/8") gauge

Light Taupe 4



heavy (1/8") gauge

Driftwood Gray 13



heavy (1/8") gauge

Malay Brown 16



1800 light gauge



1801 light gauge



1802 light gauge



1803 light gauge

Armstrong DECORAY LINOLEUM



light gauge

1804



light gauge

1805



light gauge

1806



light gauge

1807

Armstrong DECORAY LINOLEUM



1810

light gauge



1811

light gauge



1812

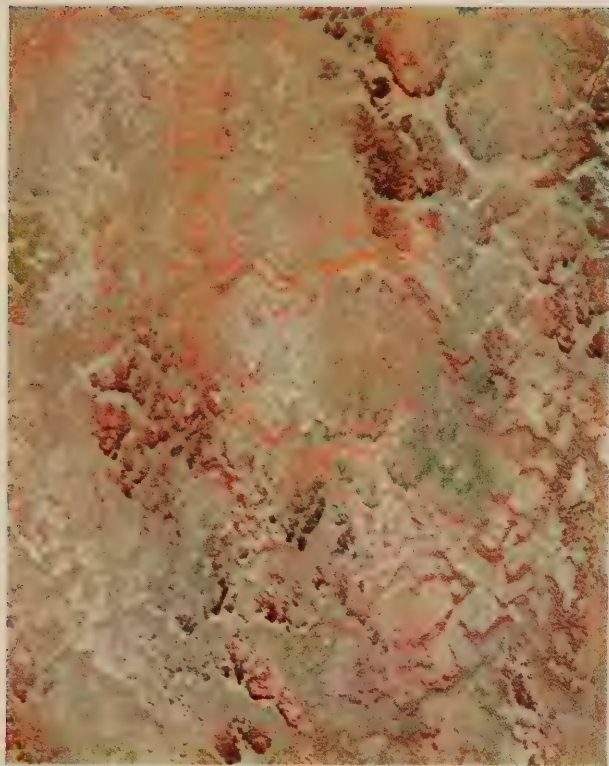
light gauge



1813

light gauge

Armstrong DECORAY LINOLEUM



standard gauge

10000



standard gauge

10001



standard gauge

10002

Armstrong Linoleum is one of the most practical of today's carefree modern flooring materials. It is so easy to clean and to keep clean. It does away with the old-fashioned "down-on-your-knees" way of cleaning, for its smooth, virtually seamless surface doesn't give dirt a chance to stick or hide. Spilled things and tracked-in dirt wipe up easily and quickly. And between cleanings, many of the styles of Armstrong Linoleum actually keep dust and dirt from showing.

Good examples of this practicality are the two stylings shown in Armstrong Suburban Linoleum. The bold graining of the marbled and striated patterns helps camouflage footsteps, dirt, and dust making them ideal choices for just about any room in the home subject to traffic. Armstrong Suburban Linoleum also offers decorating opportunities. Both styles are color-keyed—each marbled coloring matches a striated coloring so that the two styles can be used together.

Armstrong SUBURBAN LINOLEUM



10003

standard gauge



10004

standard gauge



10050

standard gauge



10051

standard gauge

Armstrong SUBURBAN LINOLEUM



standard gauge

10052



standard gauge

10053



standard gauge

10054

Versatility of color and design is another important consideration in the selection of a resilient flooring. No matter what color or style decoration theme, there's an Armstrong Linoleum Floor to add just the right finishing touch to the room.

Armstrong Suburban Linoleum, one of the newest Armstrong Linoleum styles, offers both smart coloring and styling at a very modest cost. It is made in two stylings—marbleized and a modern striated design to provide just the right amount of accent color to the interior and its furnishings. Both stylings are color-keyed—each marbleized coloring matches a striated coloring so that the two styles can be used together for greater decorative effect.

Armstrong Suburban Linoleum is available in Standard Gauge only and meets F.H.A. specifications for standard gauge linoleum. Made in rolls 2 yards wide.

Armstrong SUBURBAN LINOLEUM



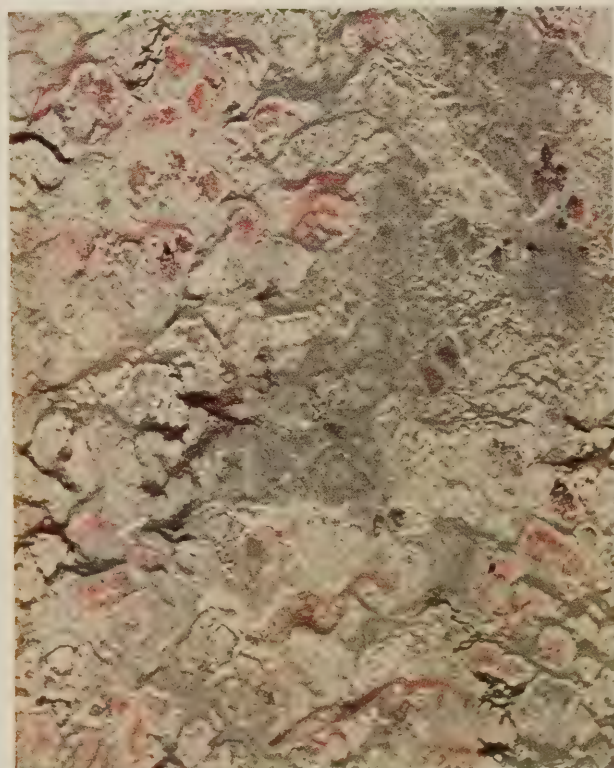
04 standard and light gauge



08 heavy (1/8"), standard, and light gauge



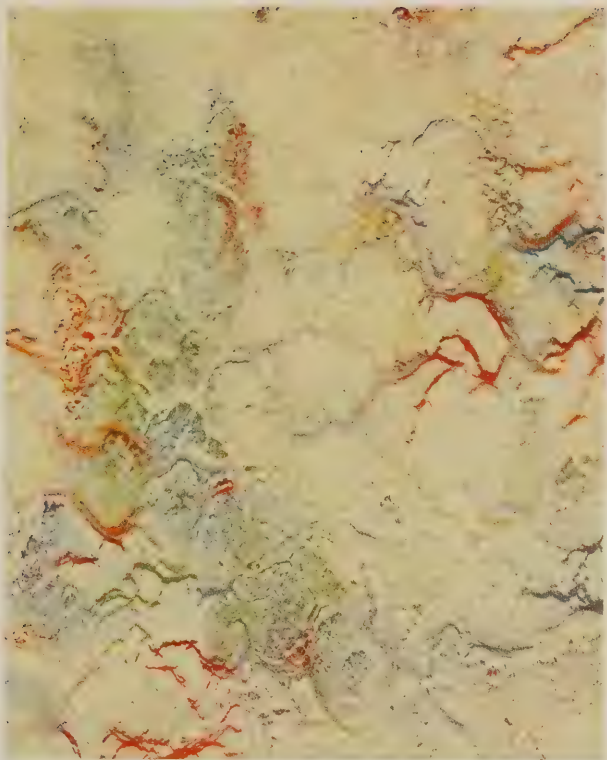
09 heavy (1/8"), standard, and light gauge



014 heavy (1/8") and standard gauge

Armstrong MARBELLE LINOLEUM

2 yards wide



standard and light gauge

015



heavy (1/8") gauge only

018



heavy (1/8"), standard, and light gauge

021



standard and light gauge

029

Armstrong MARBELLE LINOLEUM



030 heavy (1/8"), standard, and light gauge



036 heavy (1/8") gauge only



042 standard and light gauge



047 standard and light gauge

Armstrong MARBELLE LINOLEUM



standard and light gauge

048



standard gauge only

049



standard gauge only

050

Custom-designed floors add to the beauty and eye-appeal of interiors of every type and style. The versatility and flexibility of Armstrong Linoleum offer many opportunities for unique design effects since it is possible to transcribe almost any design that can be drawn on paper to the floor.

Armstrong Marbelle Linoleum is an ideal floor for custom-design work. It forms a perfect background for insets of all types featuring other linoleum styles. The distinctive non-directional marbleization helps accent the custom design and gives the entire floor area the right amount of color to tie-in the room's furnishings. For striking allover floors, two or more colors of Armstrong Marbelle Linoleum can be combined in one area.

Armstrong Marbelle Linoleum is a very practical floor styling, too. Its swirl marbleizing tends to conceal tracked-in dust and dirt until the floor can be cleaned by sweeping or light mopping. It is grease-proof and offers exceptional long wearing qualities.

Armstrong MARBELLE LINOLEUM



1500

standard gauge



1501

standard gauge



1502

standard gauge



1503

standard gauge

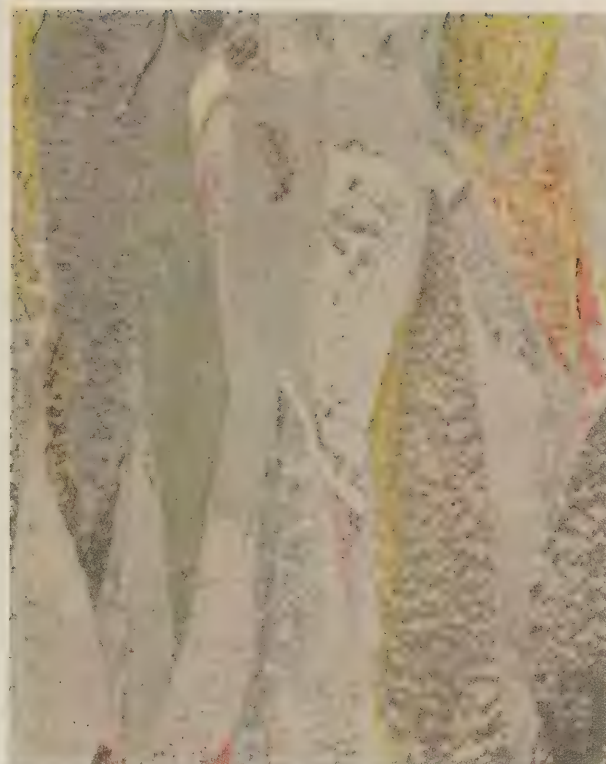
Armstrong ROYELLE LINOLEUM

24" and 2 yards wide



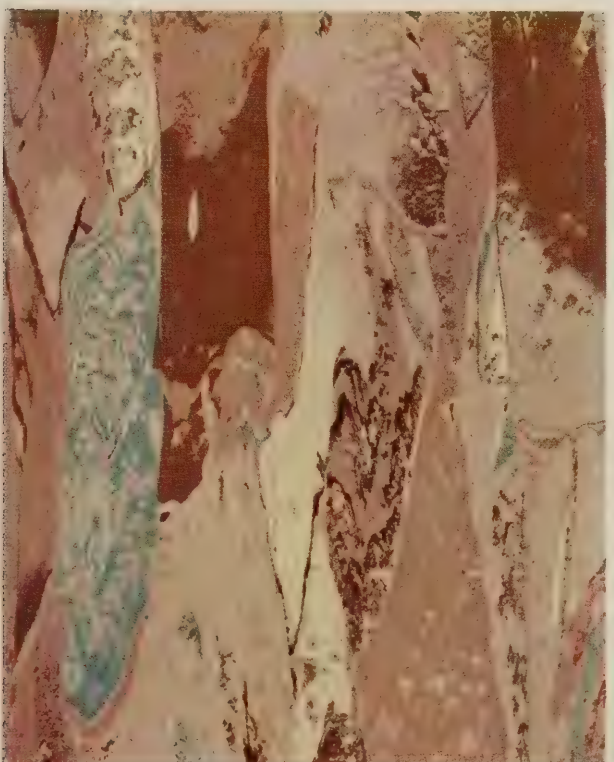
standard gauge

1508



standard gauge

1509



standard gauge not made in 24" width

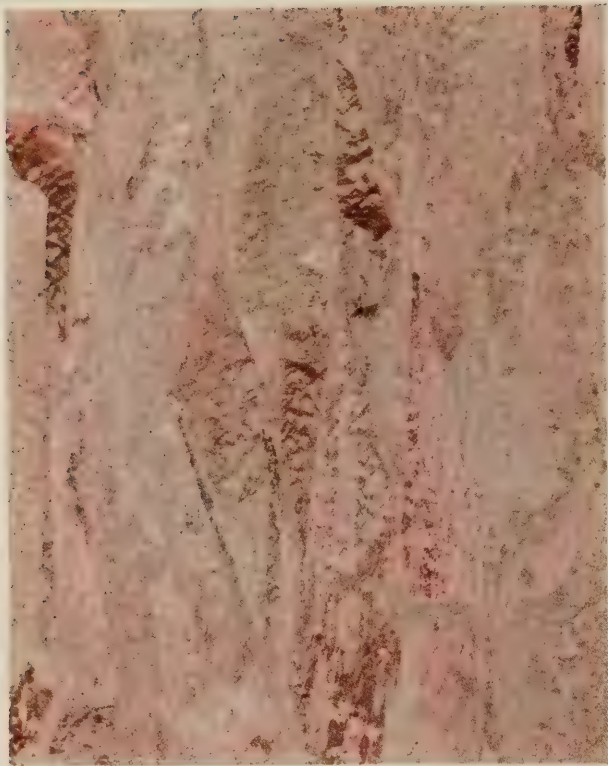
1516



standard gauge

1520

Armstrong ROYELLE LINOLEUM



1521

standard gauge



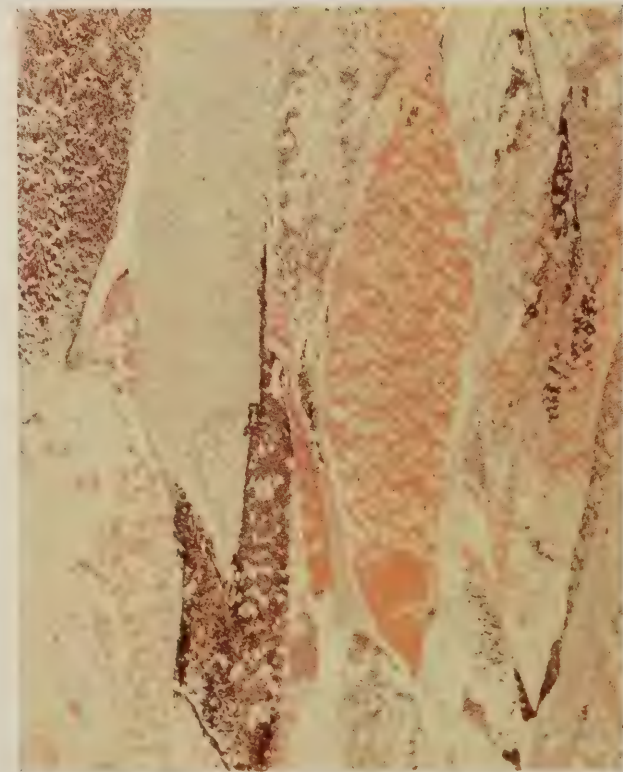
1522

standard gauge

Color is all-important in today's decorating—furnishings, fabrics, walls, and even the floors work together to give rooms unusual color, beauty, and distinction. In planning any interior, the floor should be given the first consideration since it's the largest single color area. The variety of styles offered in Armstrong Linoleum presents many interior decoration opportunities because it provides wall-to-wall color that sets the room's color scheme and holds it together decoratively.

Armstrong Royelle Linoleum, one of the newer stylings, brings a bold dash of color and interest to room settings. Its sweeping veins of color spark many decorating ideas that can be carried out in the room's furnishings.

It can be used effectively as it comes from the roll in either 2-yard or 2-foot widths, or custom designed to fit a particular idea or room design. The two-foot width developed for home installation makes it easy for the home mechanic to install beautiful floors.



1523

standard gauge

Armstrong ROYELLE LINOLEUM

24" and 2 yards wide



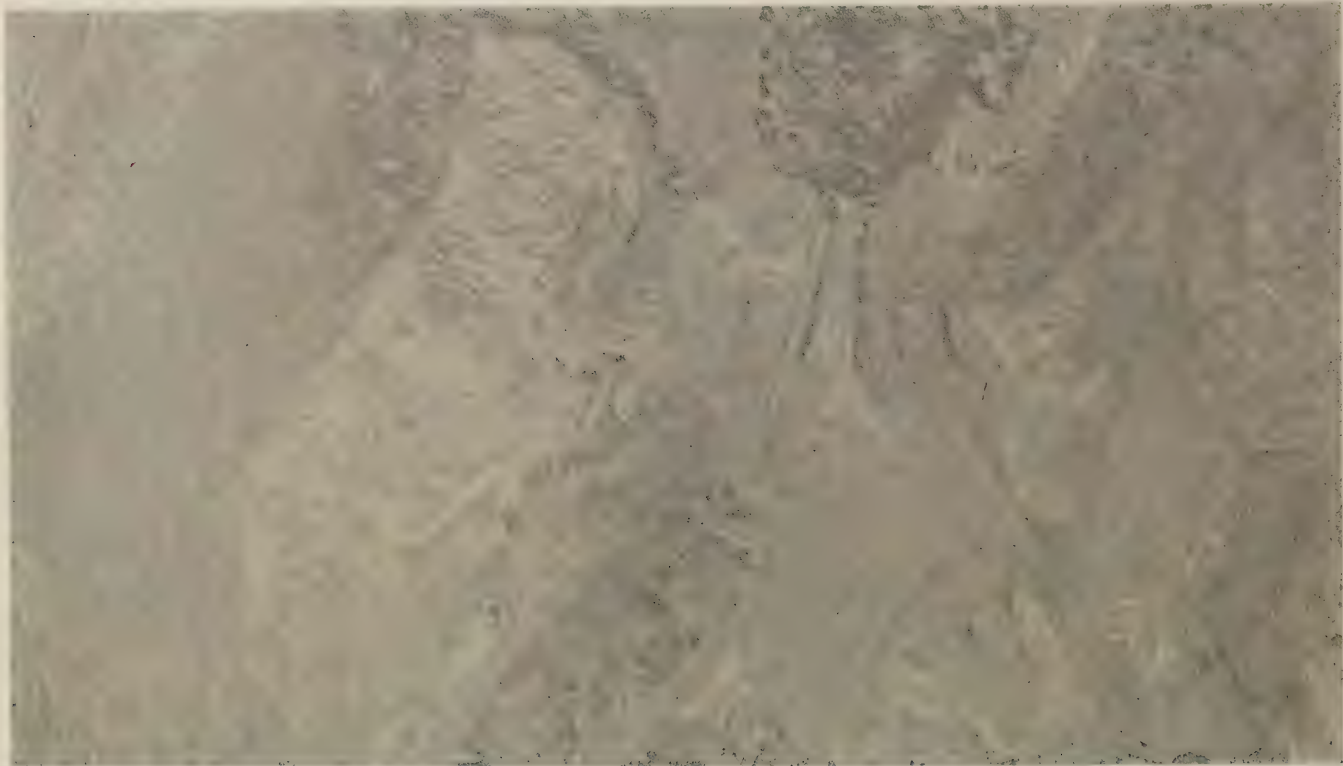
heavy (1/8") gauge 1550



Armstrong TEXTELLE LINOLEUM



1551 heavy (1/8") gauge



1552 heavy (1/8") gauge

Armstrong TEXTELLE LINOLEUM

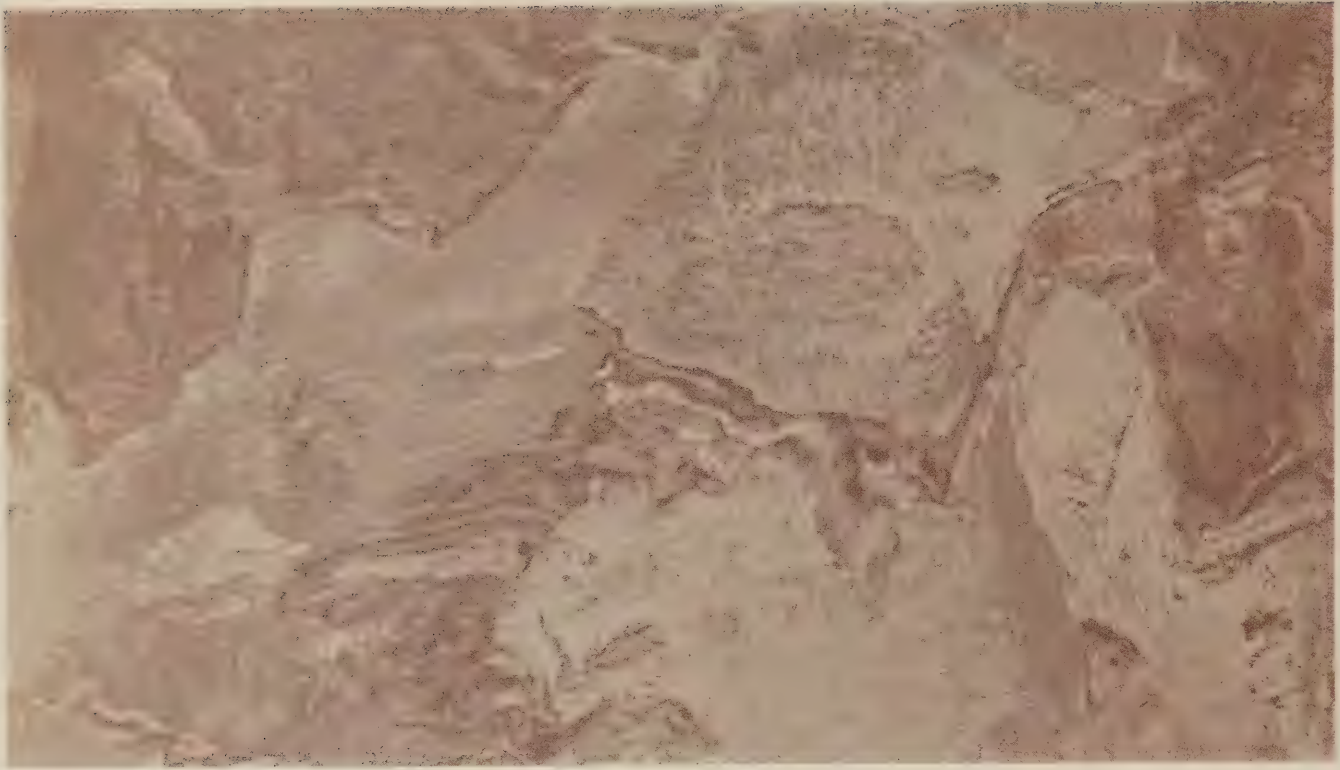


heavy (1/8") gauge 1553



heavy (1/8") gauge 1554

Armstrong TEXTELLE LINOLEUM



1555 heavy (1/8") gauge



1556 heavy (1/8") gauge

Armstrong TEXTELLE LINOLEUM



5000 Fiesta White standard gauge

with Armofelt Back

95000

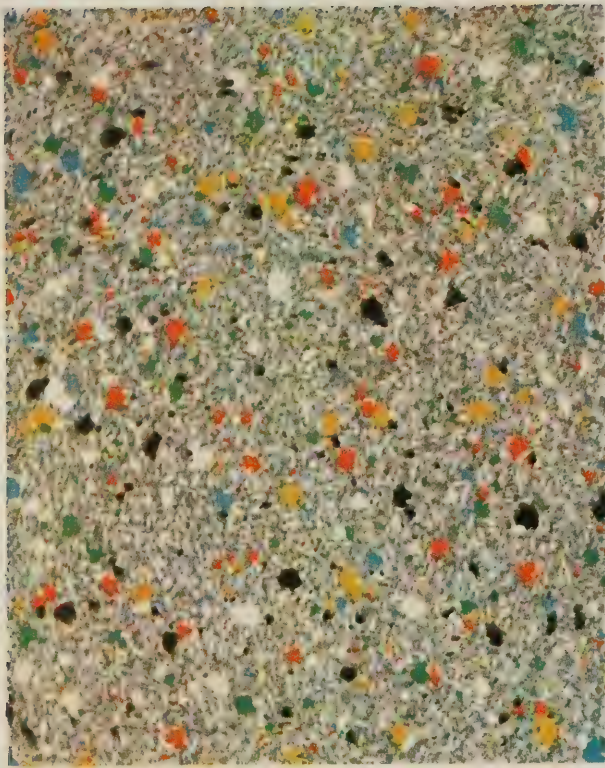
with Cushion-Eze Back

Armstrong Spatter Linoleum is one of today's most popular floor stylings. The colorful, carefree Early American spatterdash design gives interiors a smart, yet informal atmosphere. In addition to its gay appearance, the random multicolored dot effect and richly colored backgrounds offer fresh approaches to interior decorating.

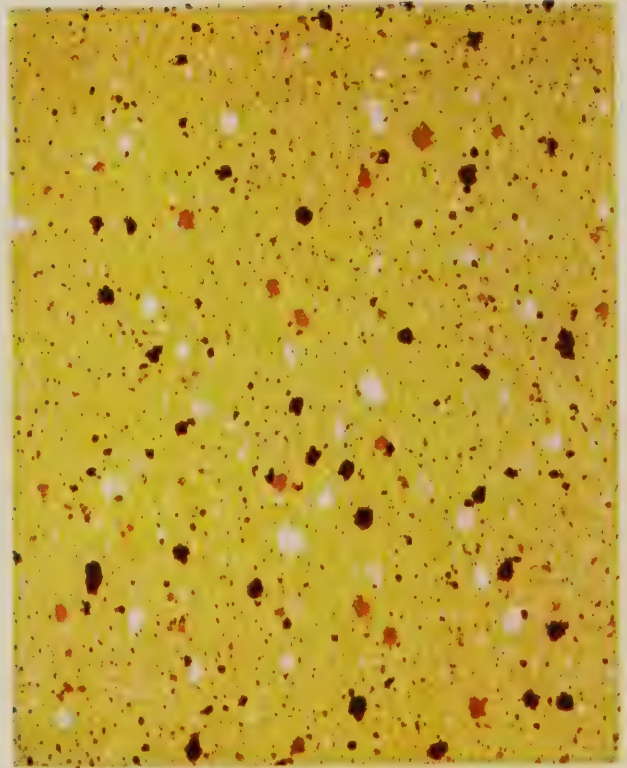
As a practical feature, the irregular arrangement of the dots over the textured background helps hide tracked-in dirt and dust until cleaning time. Spatter Linoleum wears and wears, because the inlaid colors, dots included, go right through to the backing.

Offering new luxury in underfoot comfort, six Spatter patterns, indicated with the figure 9 preceding the pattern number, are available with the new exclusive Armstrong Cushion-Eze Back. This exclusive backing consists of a foam layer backing which actually supports the linoleum floor on little air bubbles—giving the feeling of walking on air. The indentation resistance of Cushion-Eze backed linoleum is the same as Armofelt Back—75 pounds per square inch.

Armstrong SPATTER LINOLEUM



5004 Granada Gray standard gauge 95004
with Armofelt Back *with Cushion-Eze Back*



5005 Cortez Yellow standard gauge



5007 Tuscany Tan standard gauge



5014 Toledo Taupe standard gauge 95014
with Armofelt Back *with Cushion-Eze Back*

Armstrong SPATTER LINOLEUM



5018 Amarillo Gray

standard gauge

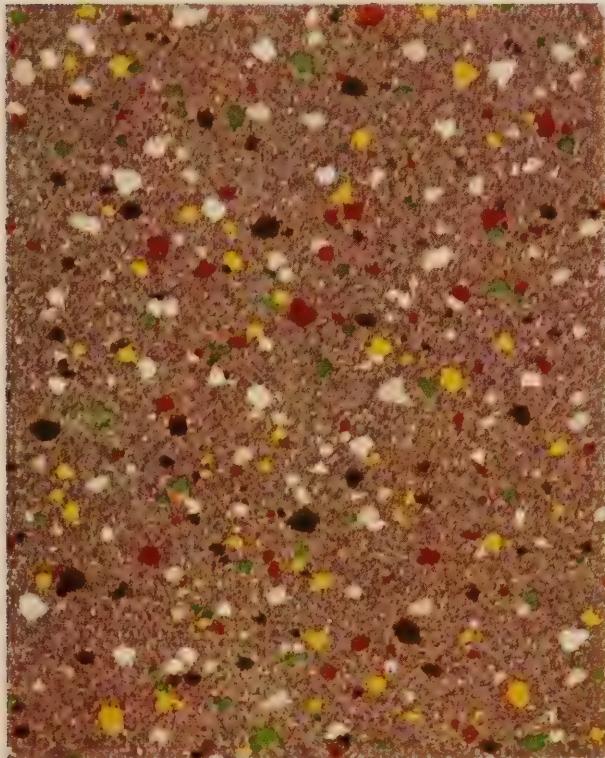


5019 Malaga Green standard gauge

with Armofelt Back

95019

with Cushion-Eze Back



5022 Culebra Copper

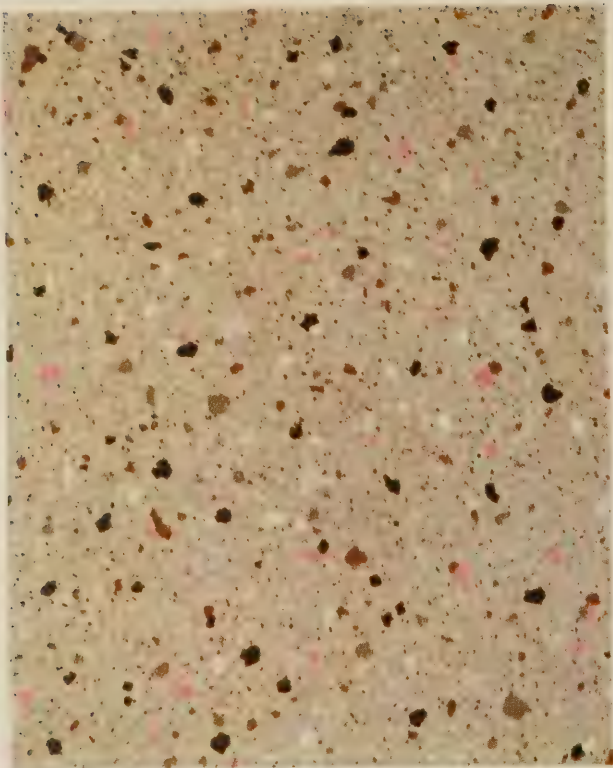
standard gauge



5024 Carboneras Pink

standard gauge

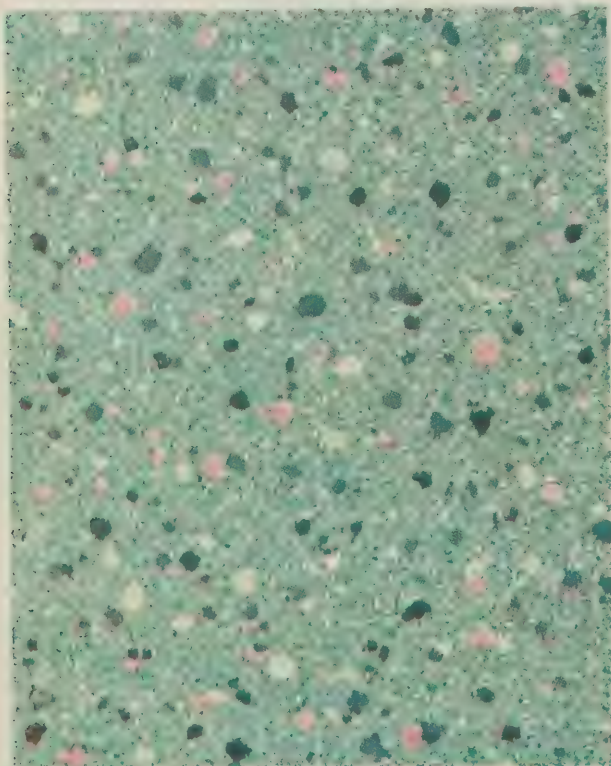
(Armstrong SPATTER LINOLEUM



5025 Sevilla Sand standard gauge 95025
with Armofelt Back *with Cushion-Eze Back*



5026 Madrigal Taupe standard gauge



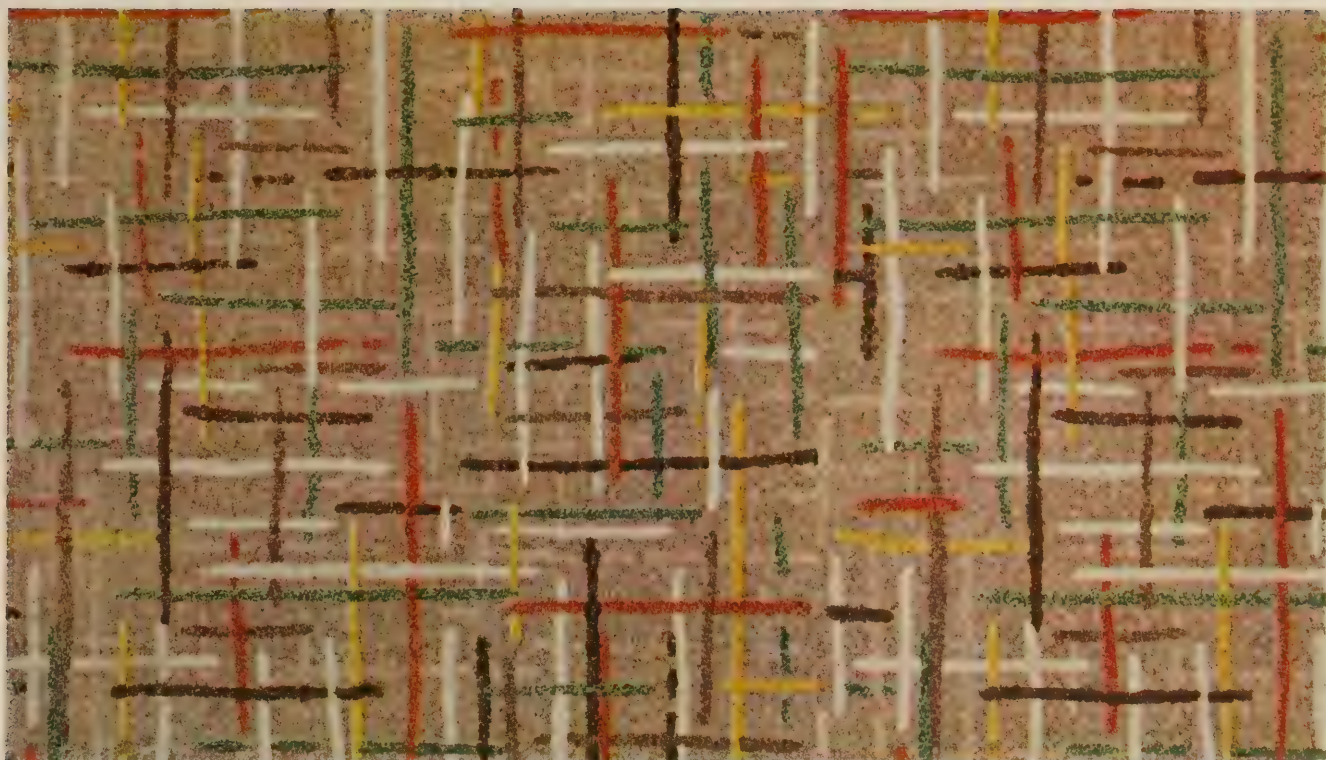
5027 Almeria Turquoise standard gauge



5028 Coruna Gray standard gauge 95028
with Armofelt Back *with Cushion-Eze Back*

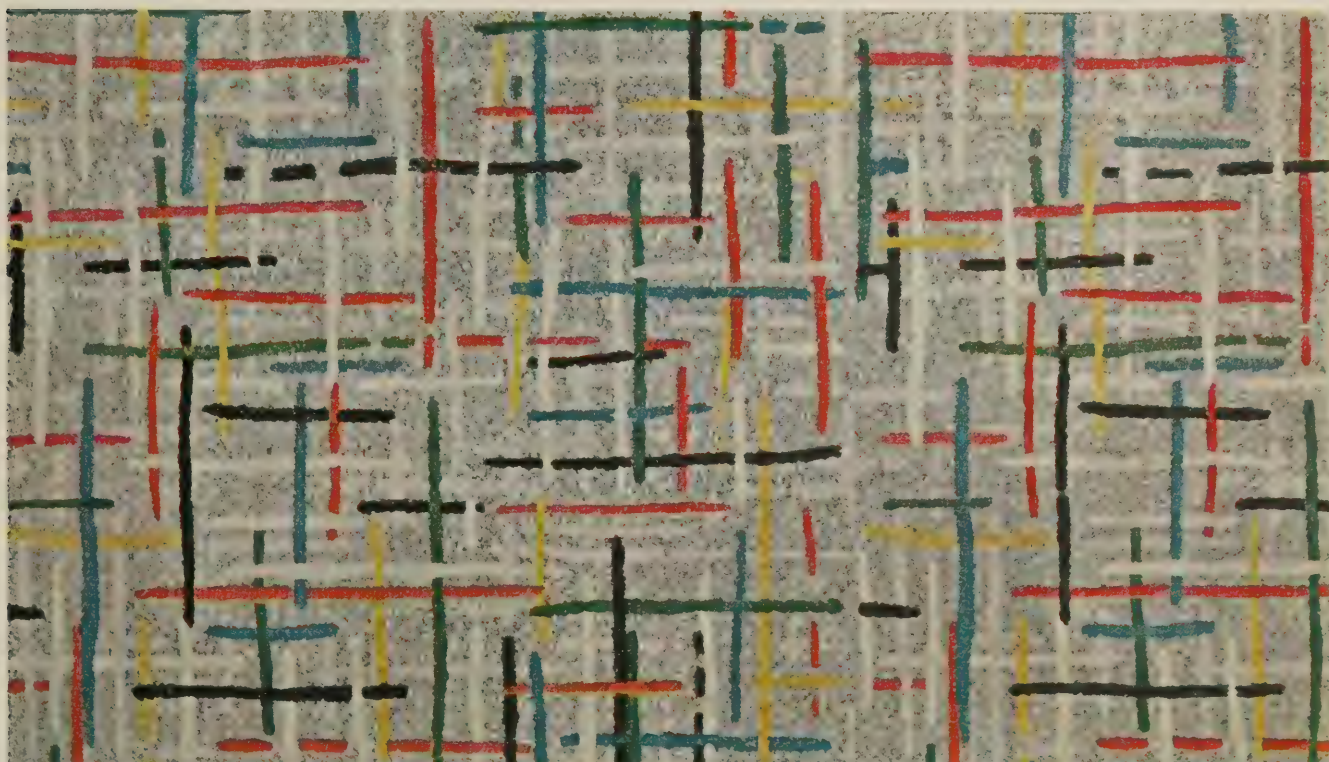
Armstrong SPATTER LINOLEUM

2 yards wide



standard gauge

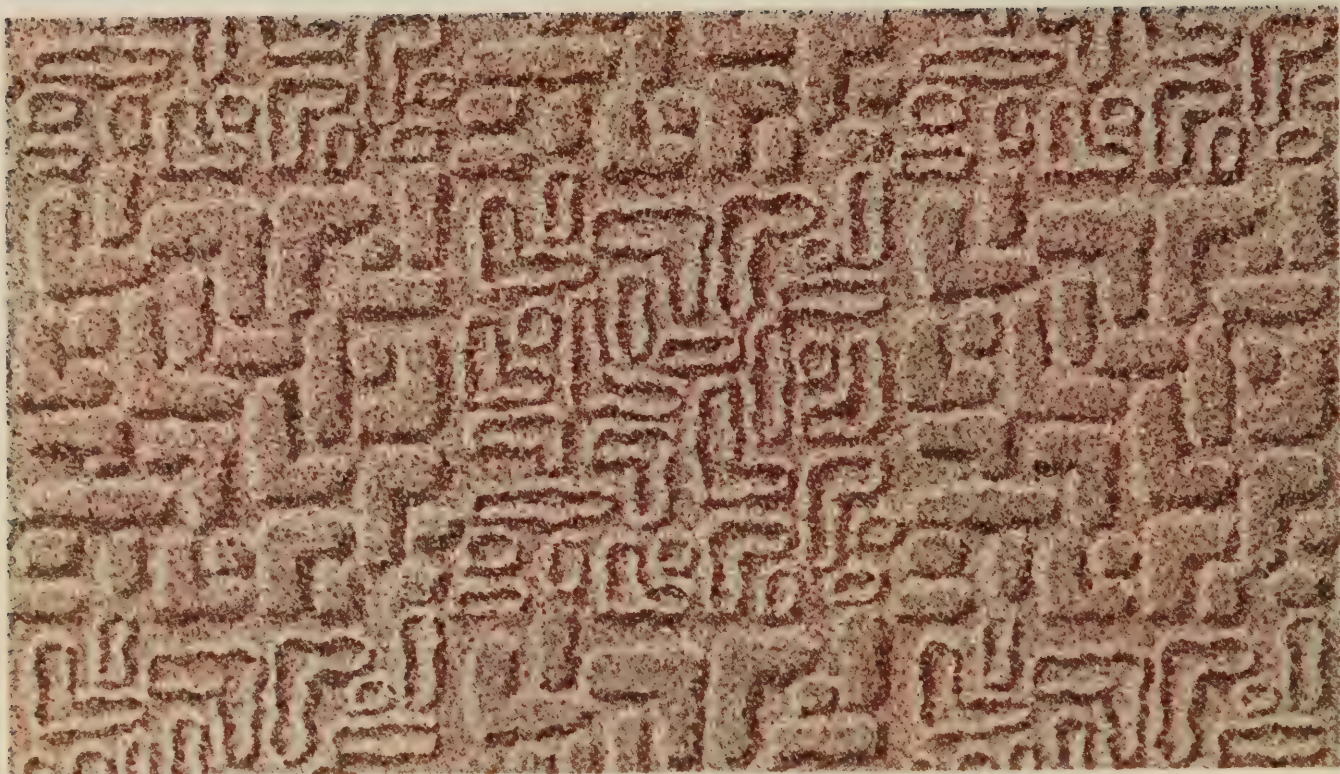
5110



standard gauge

5112

Armstrong CRAFTLINE INLAID LINOLEUM



5140

standard gauge



5141

standard gauge

Armstrong CRAFTLINE INLAID LINOLEUM



standard gauge

Constellation 5150



standard gauge

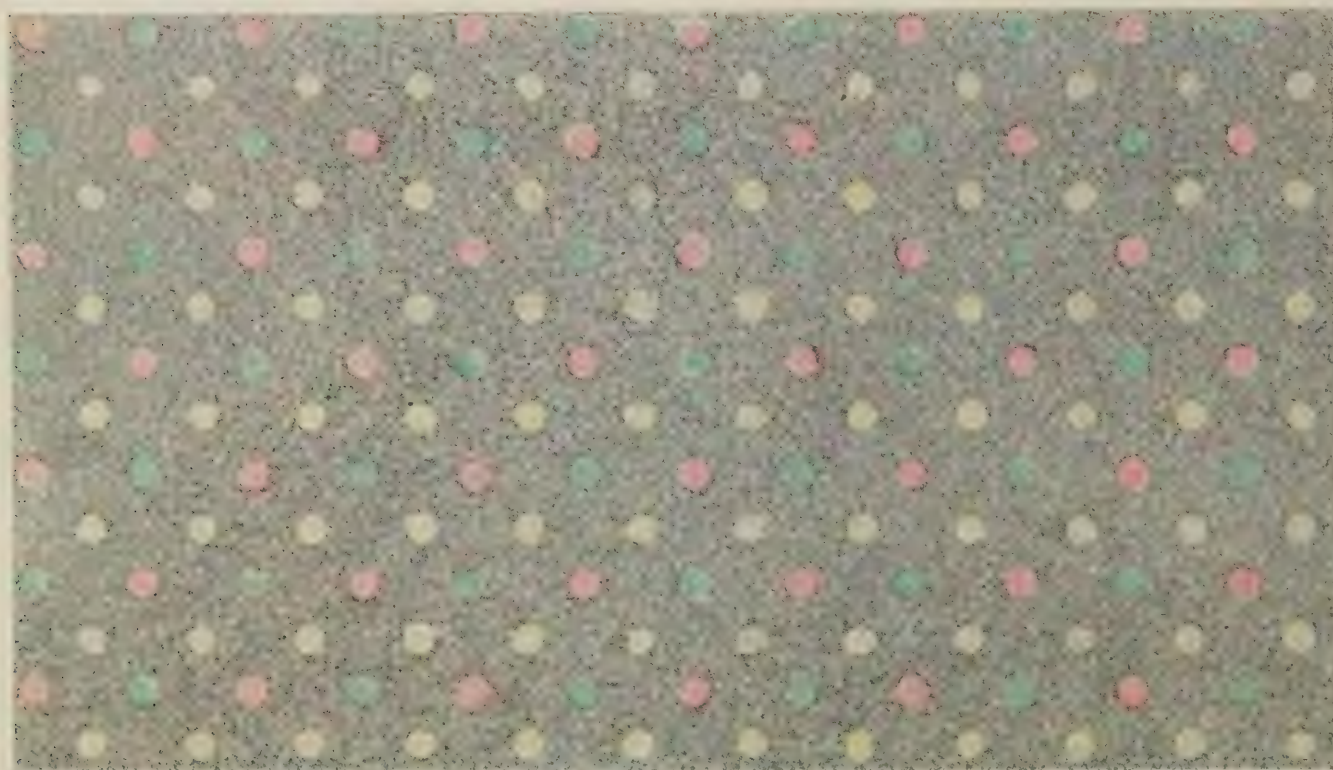
Constellation 5151

Armstrong CRAFTLINE INLAID LINOLEUM



5160 Polka Dot

standard gauge



5161 Polka Dot

standard gauge

Armstrong CRAFTLINE INLAID LINOLEUM

2 yards wide



standard gauge

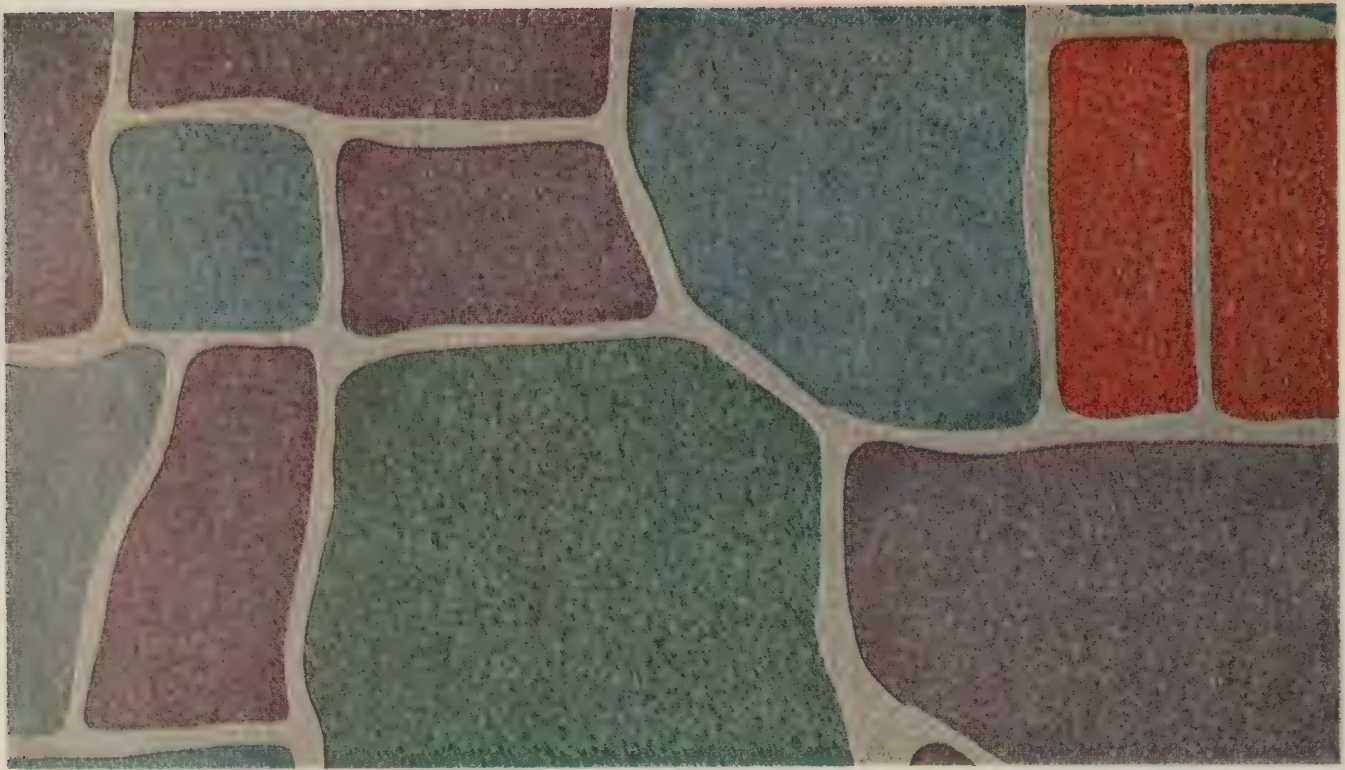
5300



standard gauge

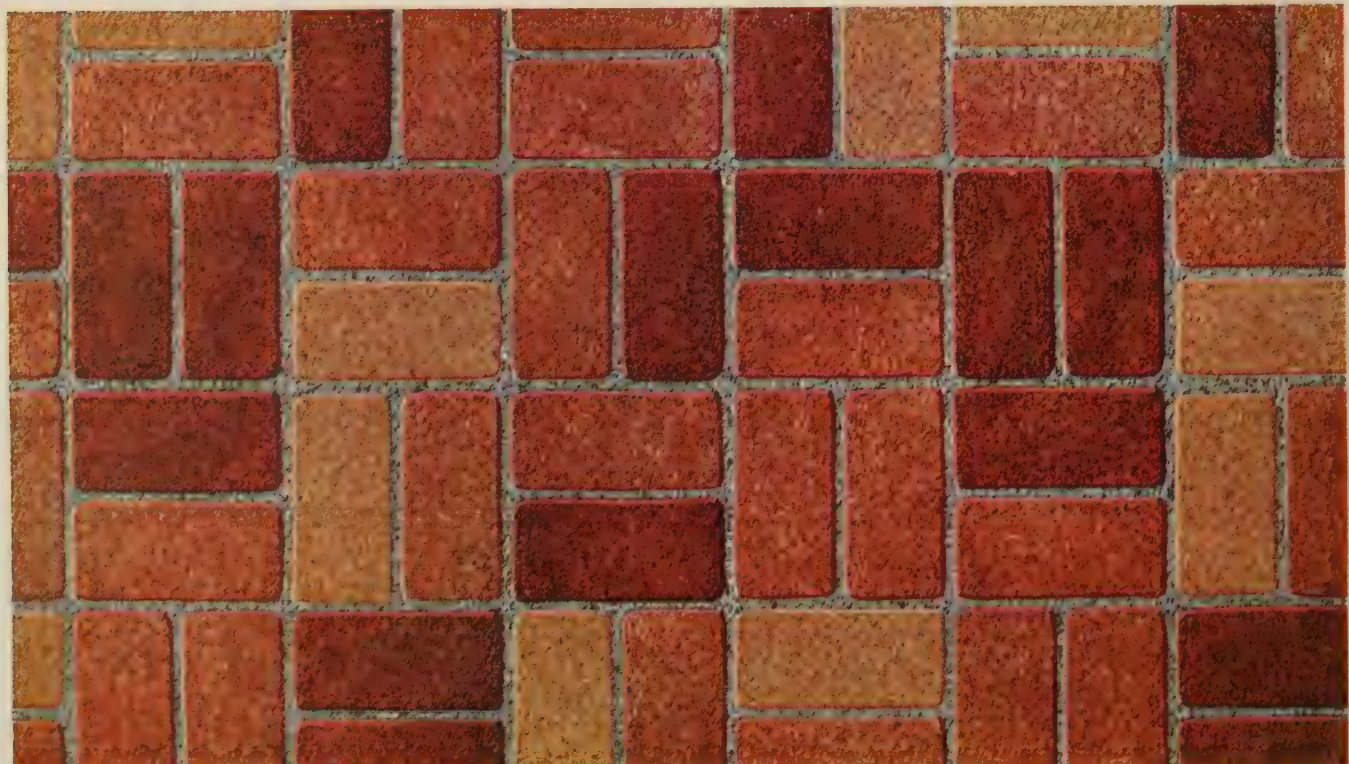
5310

Armstrong EMBOSSED INLAID LINOLEUM



5311

standard gauge



5321

standard gauge

Armstrong EMBOSSED INLAID LINOLEUM



standard gauge

5351



standard gauge

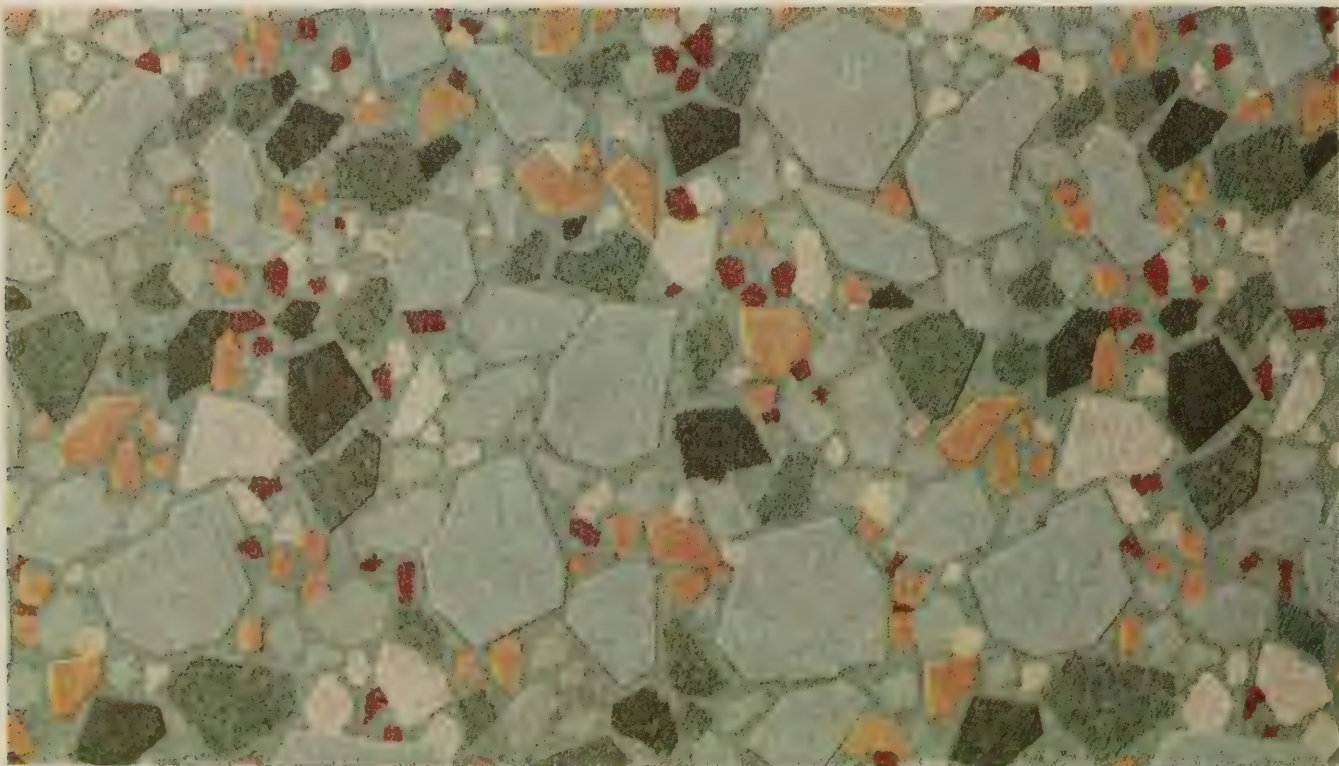
5352

Armstrong EMBOSSED INLAID LINOLEUM



5390

standard gauge

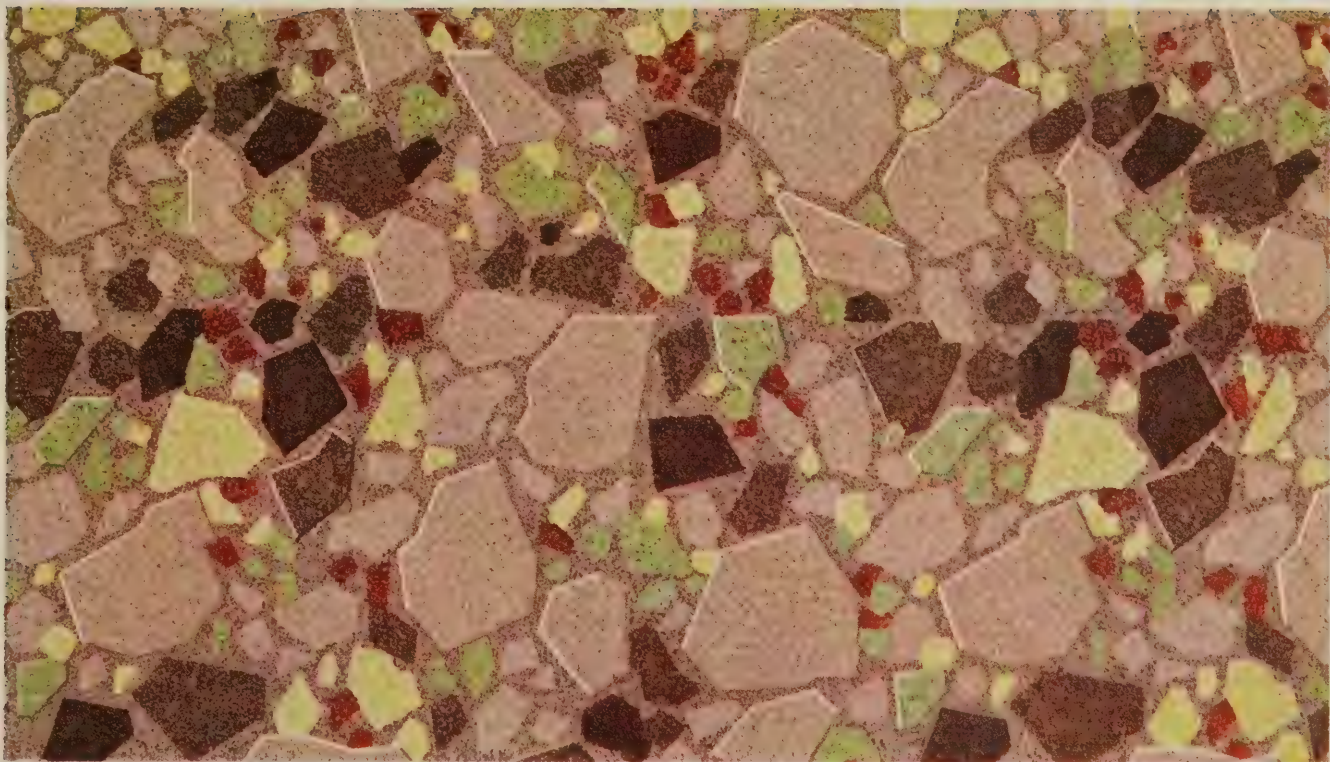


5392

standard gauge

Armstrong EMBOSSED INLAID LINOLEUM

2 yards wide



standard gauge

5393

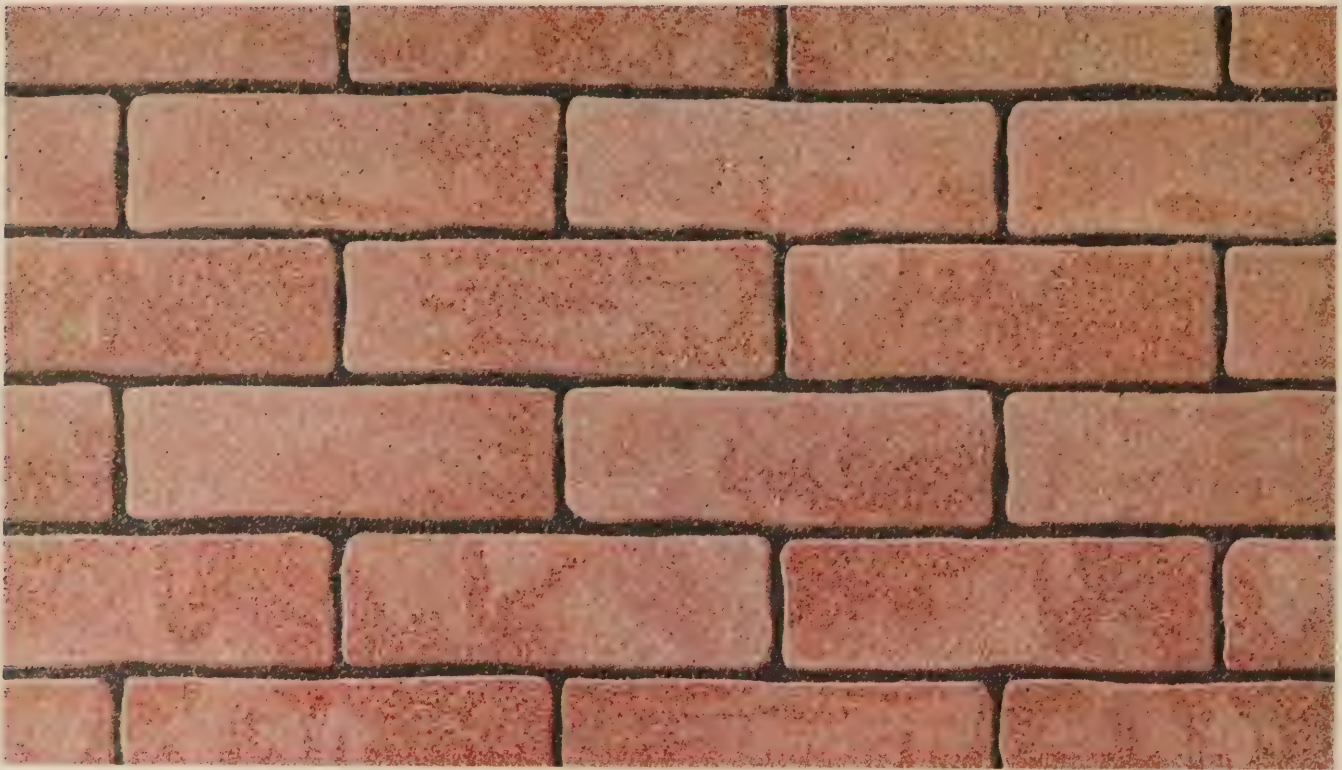


standard gauge

5490

Armstrong EMBOSSED INLAID LINOLEUM

2 yards wide



5491

standard gauge



5500

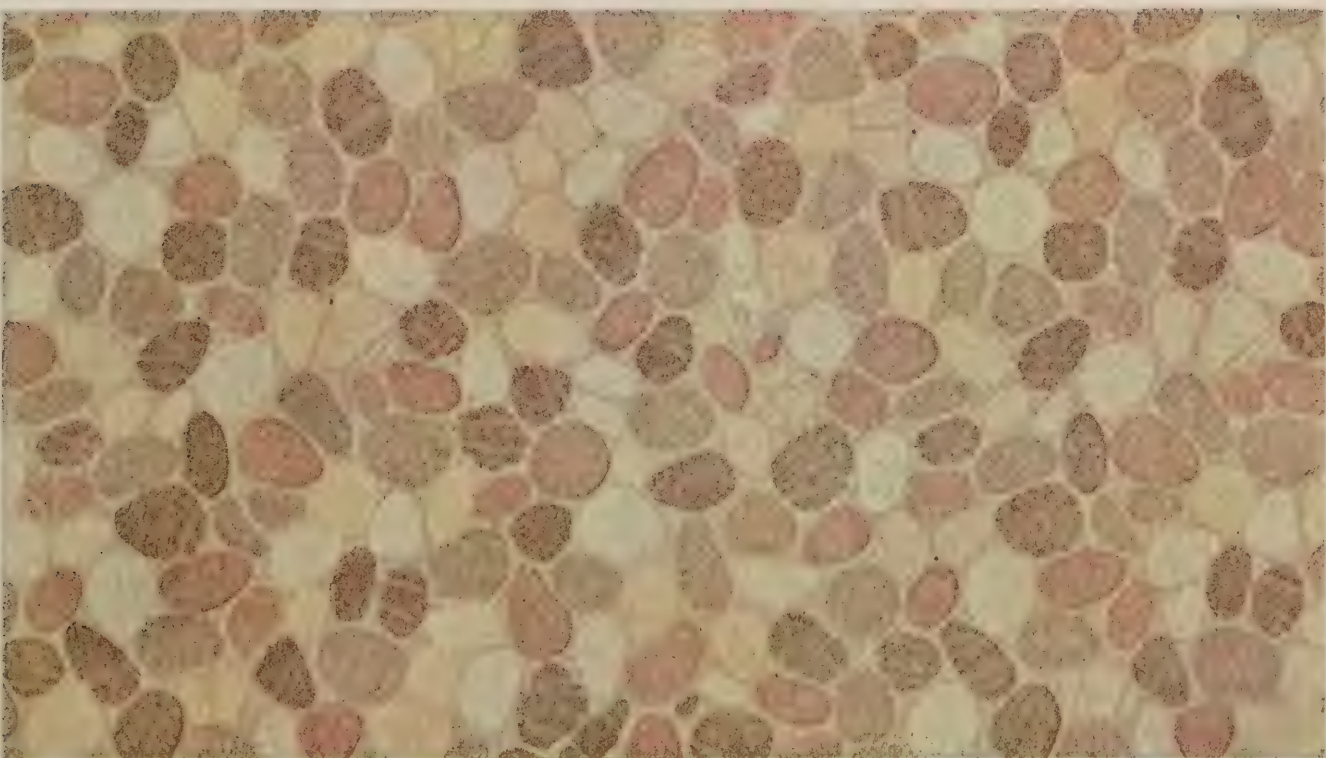
standard gauge

Armstrong EMBOSSED INLAID LINOLEUM



standard gauge

5501



standard gauge

5510

Armstrong EMBOSSED INLAID LINOLEUM



5511

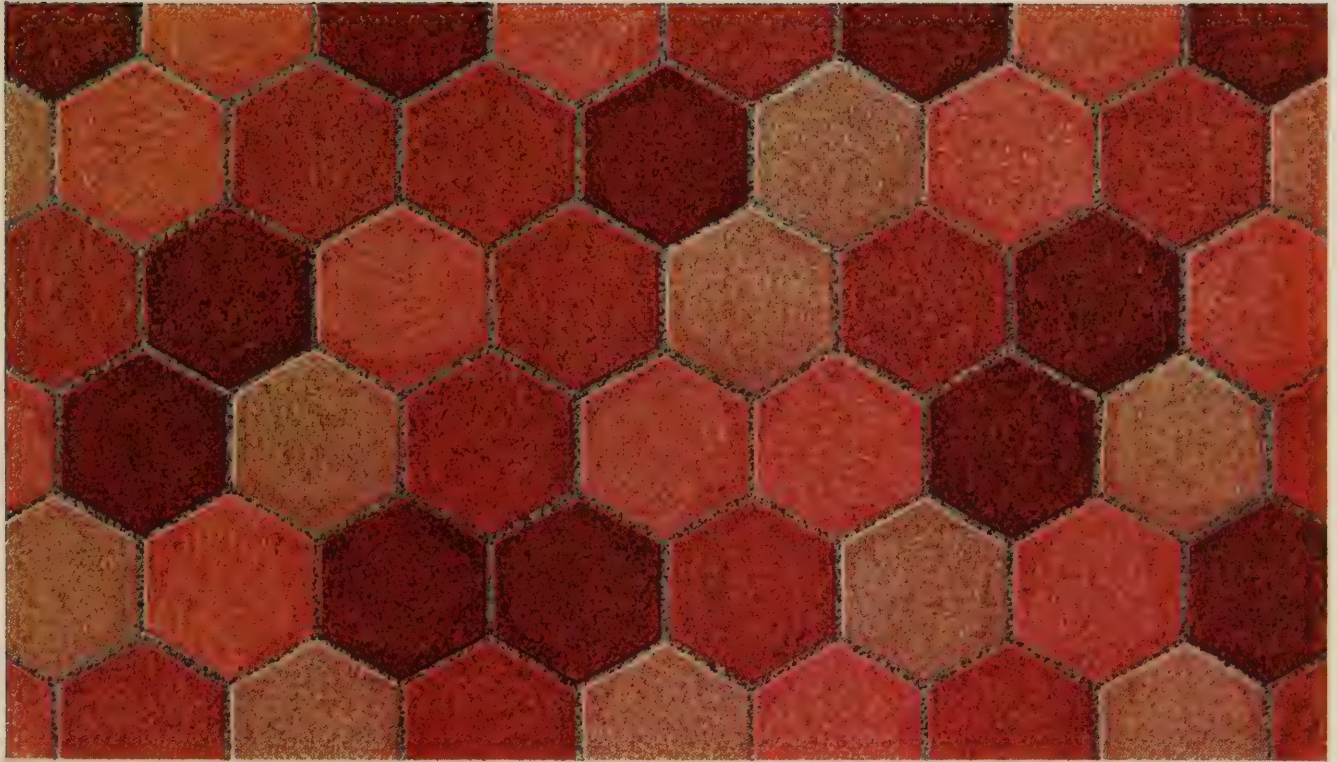
standard gauge



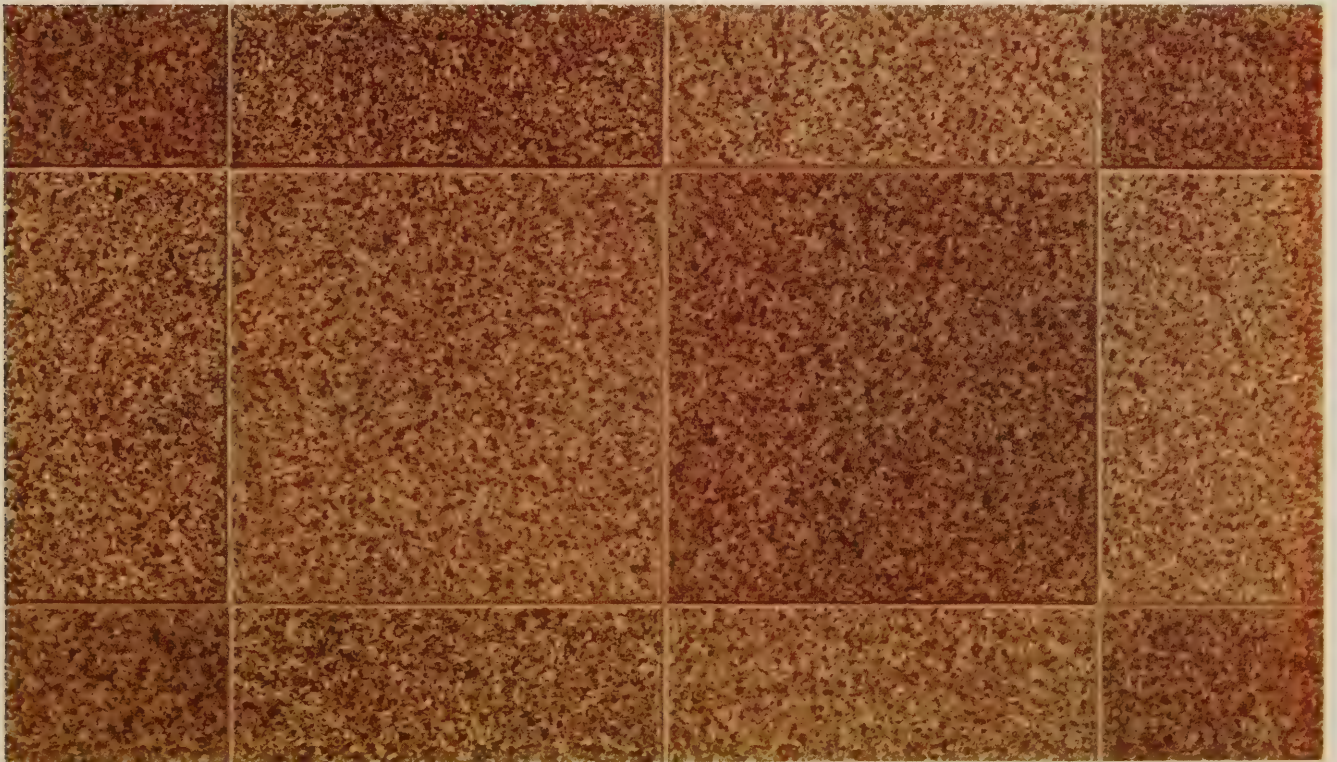
5520

standard gauge

Armstrong EMBOSSED INLAID LINOLEUM



standard gauge 5521



standard gauge 5530

Armstrong EMBOSSED INLAID LINOLEUM

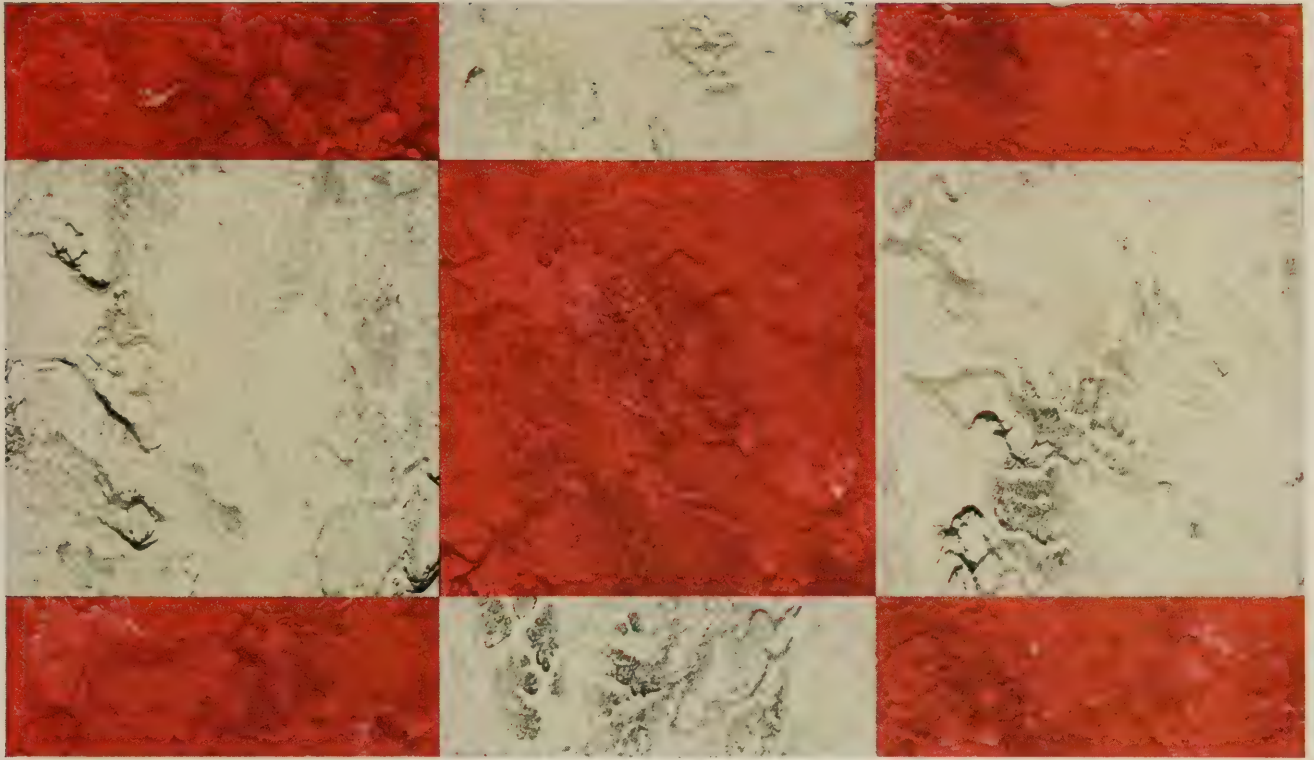


5792 standard gauge



5793 standard gauge

Armstrong EMBOSSED INLAID LINOLEUM

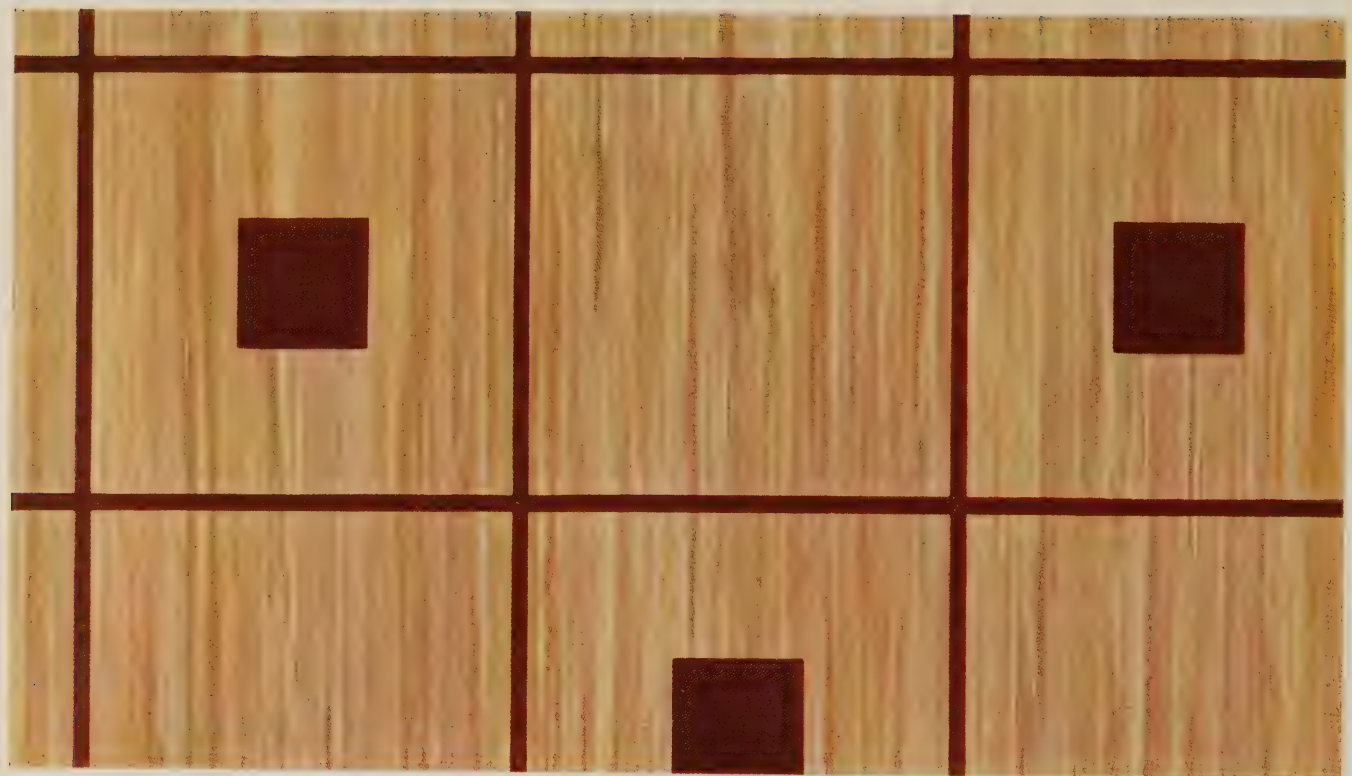


standard gauge—size of blocks—9" x 9" 1690



standard gauge—size of blocks—9" x 9" 1693

Armstrong STRAIGHT LINE INLAID LINOLEUM



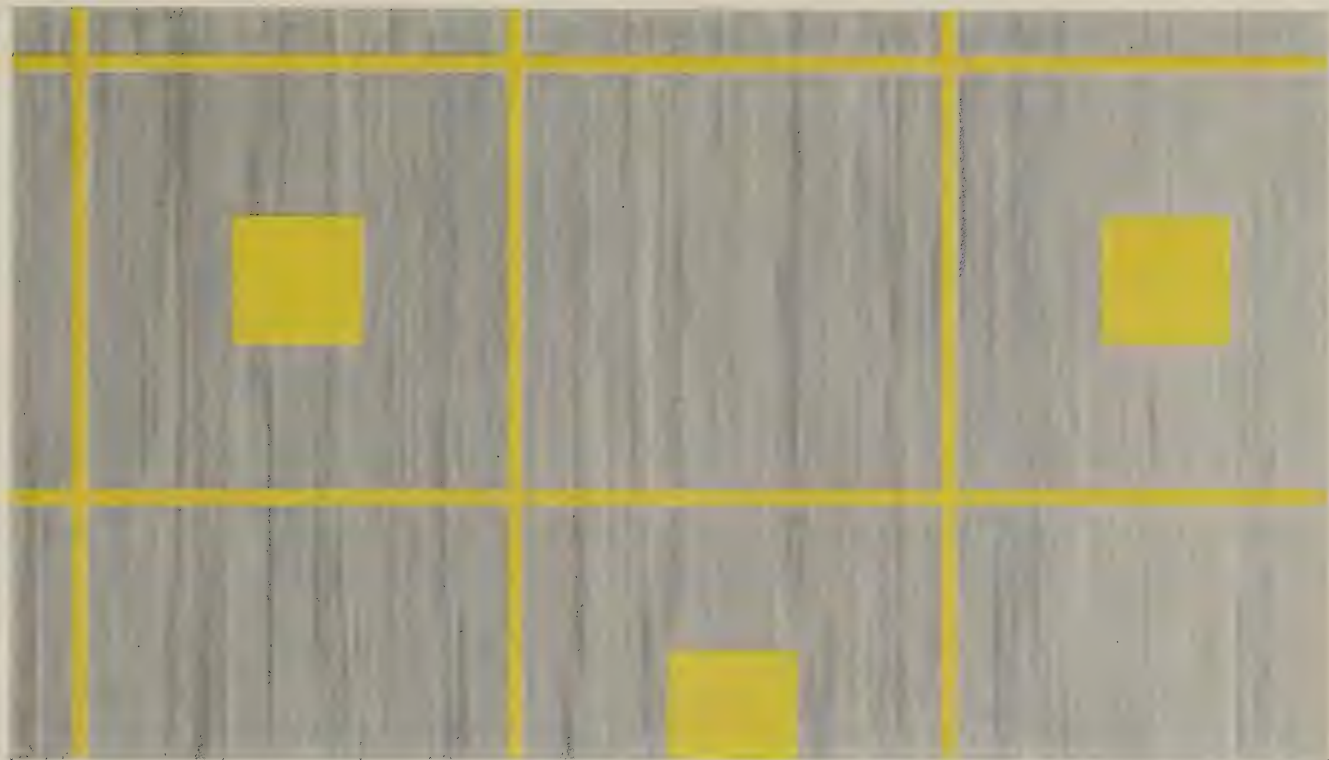
1850 light gauge



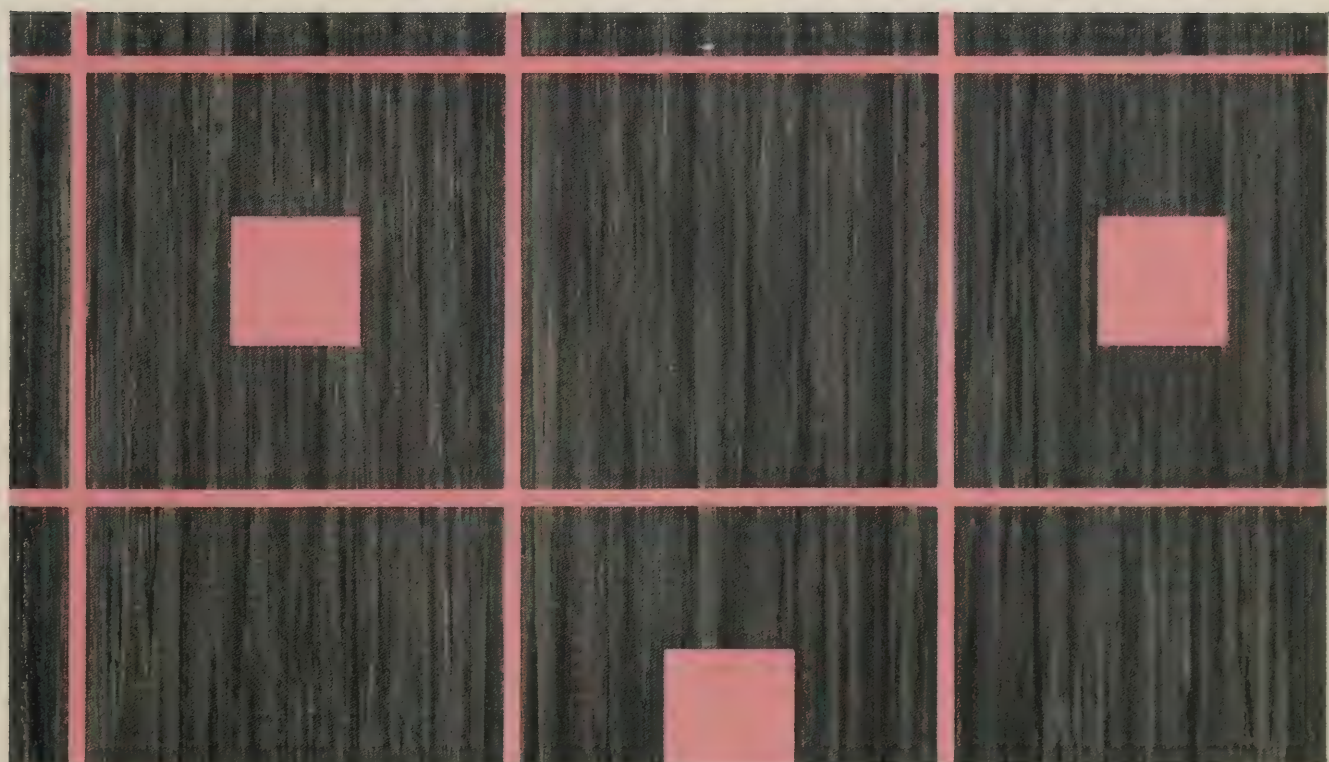
1851 light gauge

Armstrong NEWRAY INLAID LINOLEUM

2 yards wide

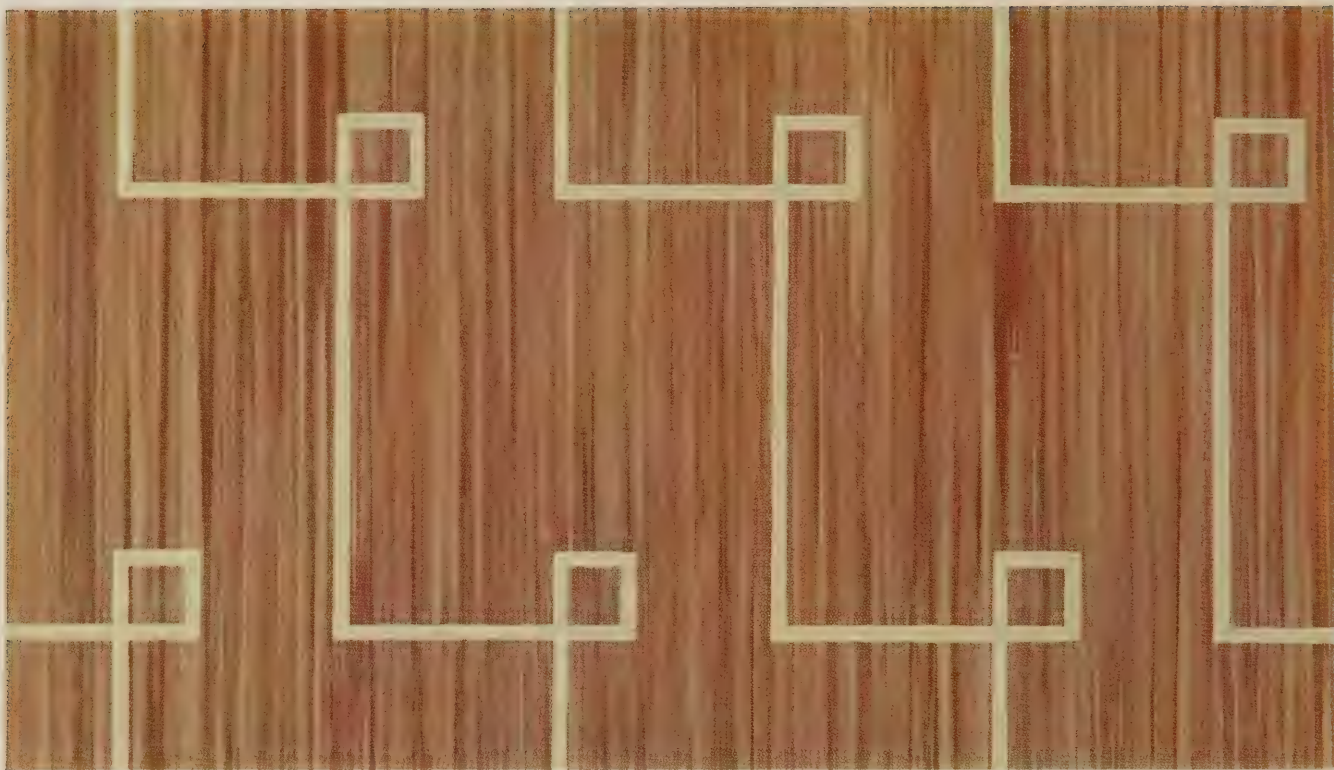


light gauge 1852

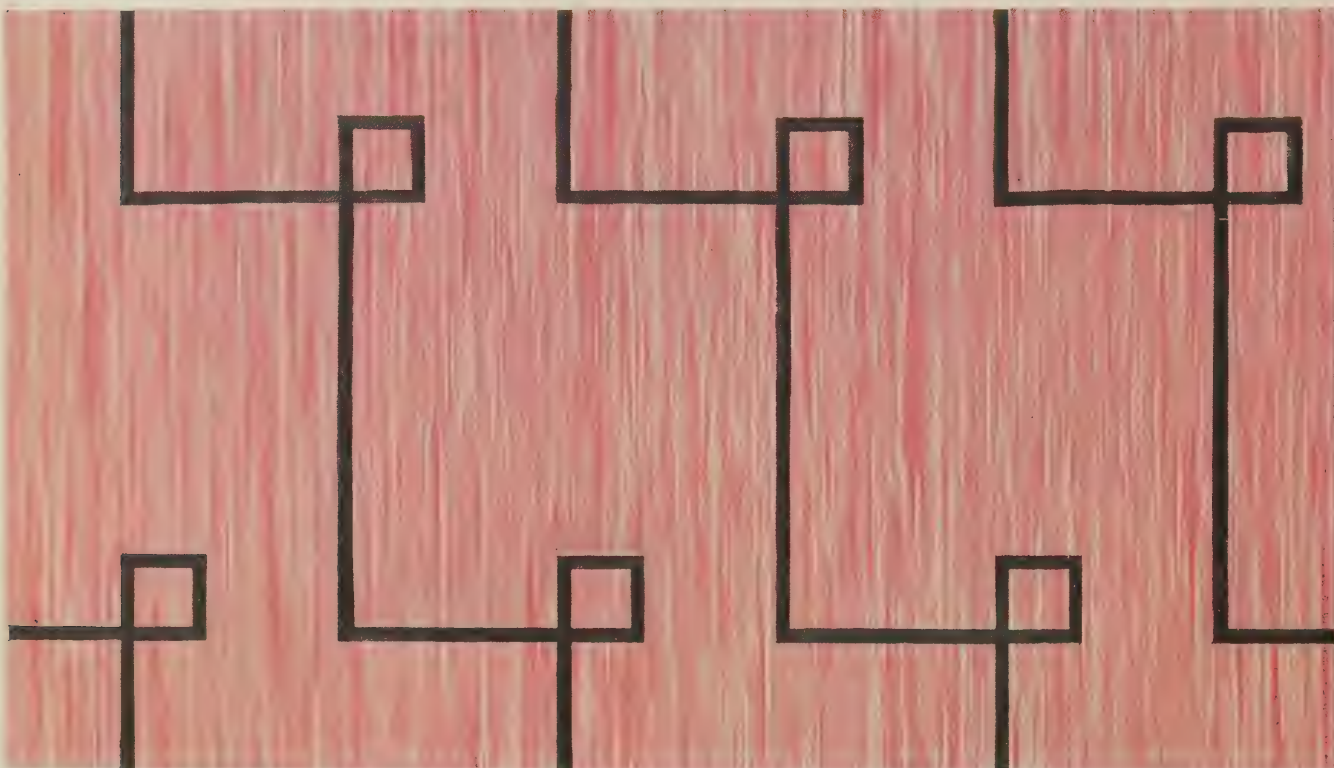


light gauge 1855

Armstrong NEWRAY INLAID LINOLEUM

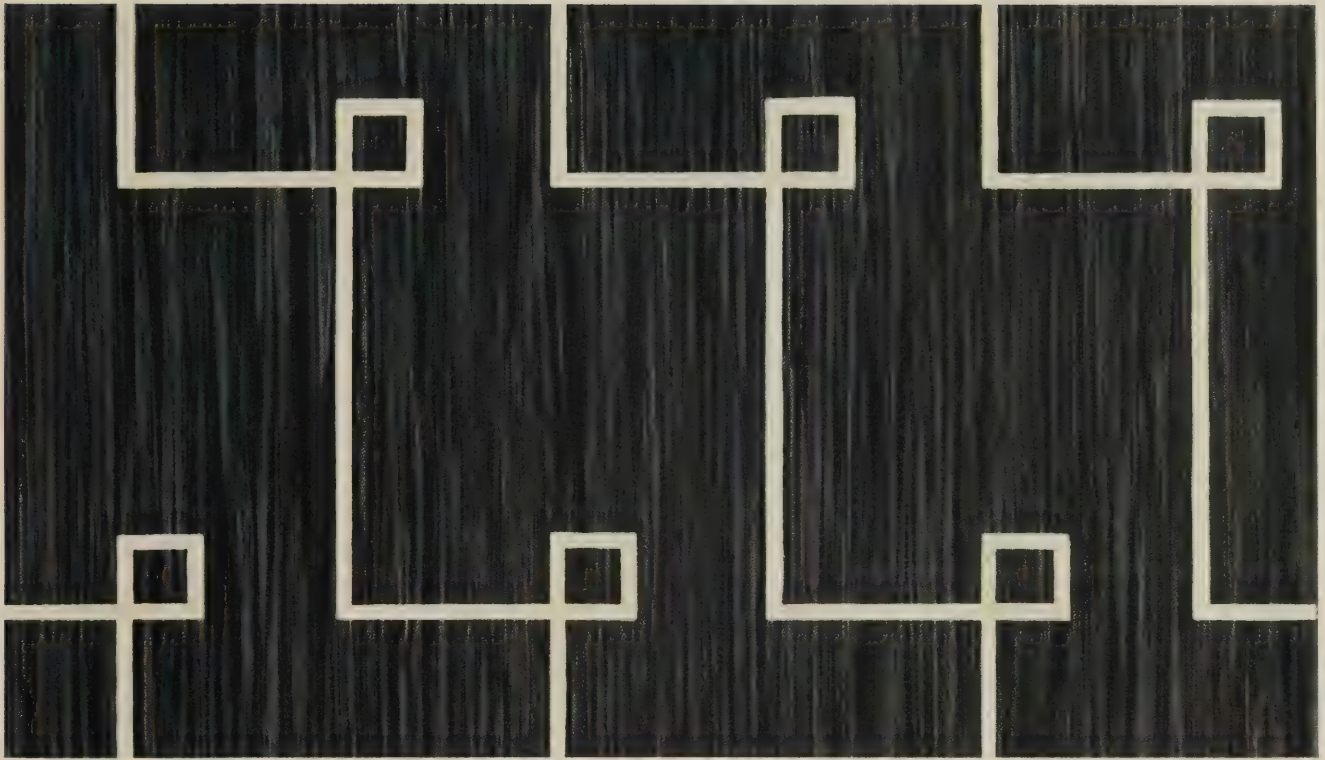


1860 light gauge

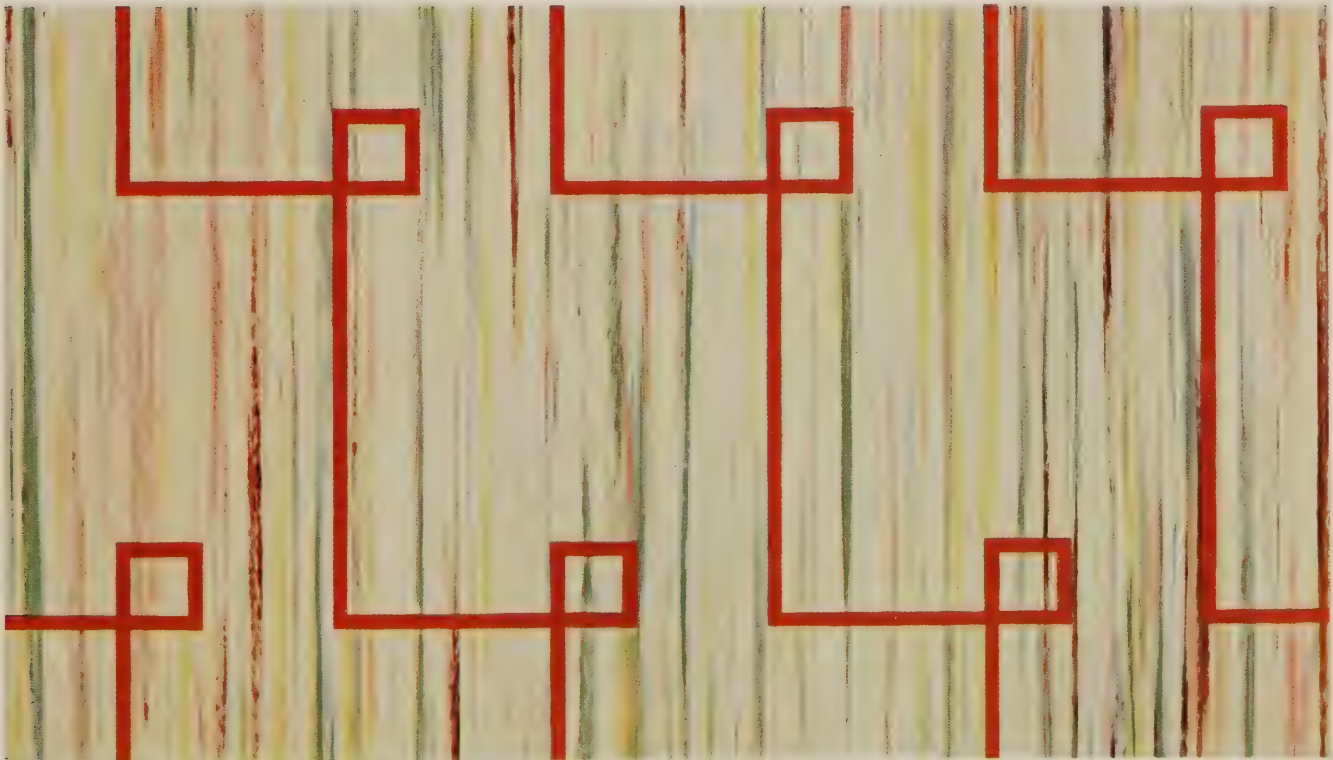


1861 light gauge

Armstrong NEWRAY INLAID LINOLEUM

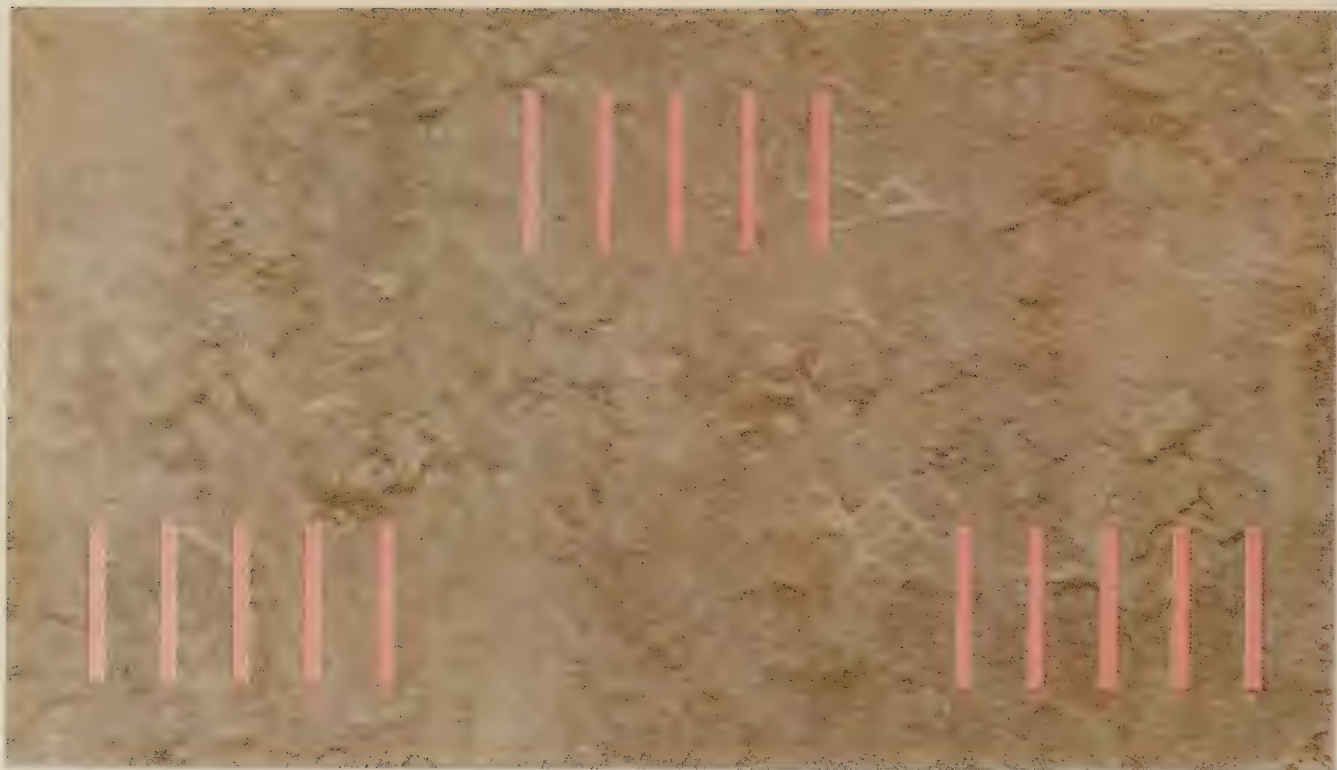


light gauge 1862



light gauge 1863

Armstrong NEWRAY INLAID LINOLEUM

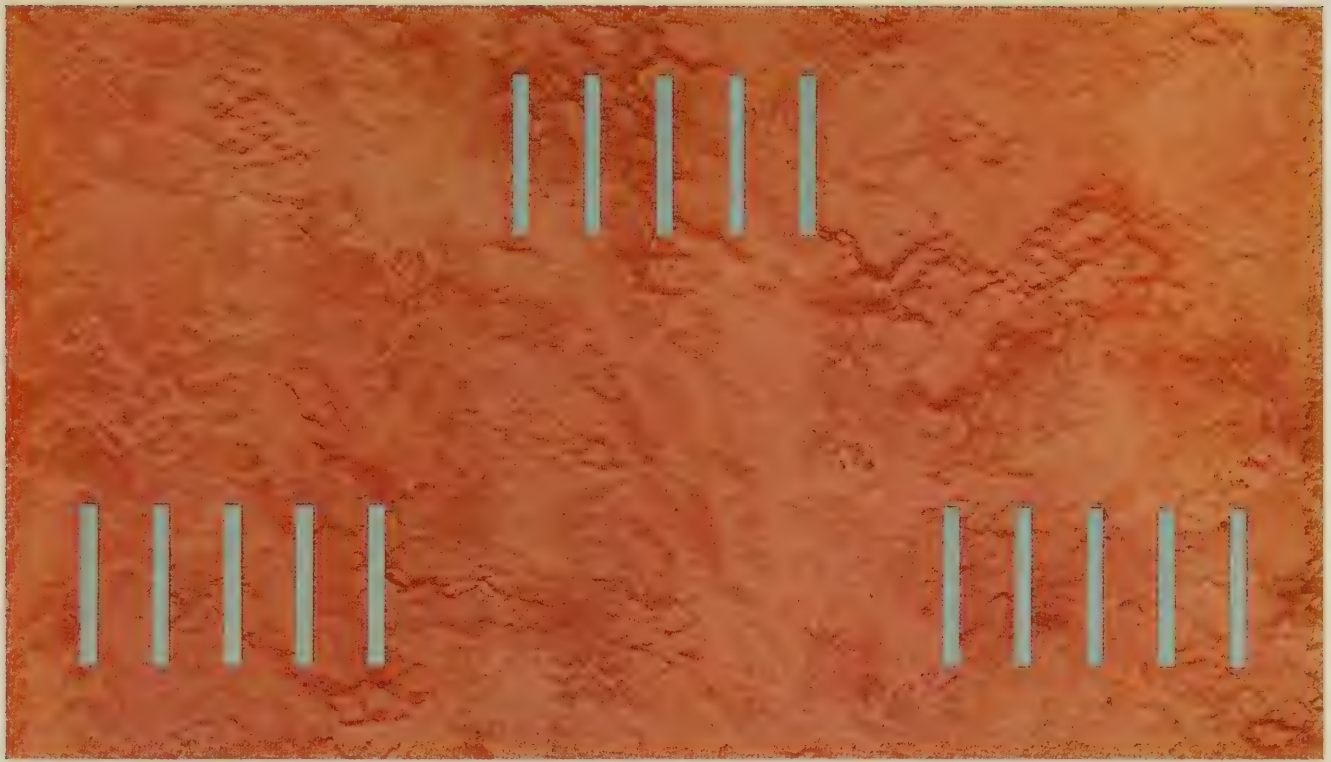


1870 light gauge

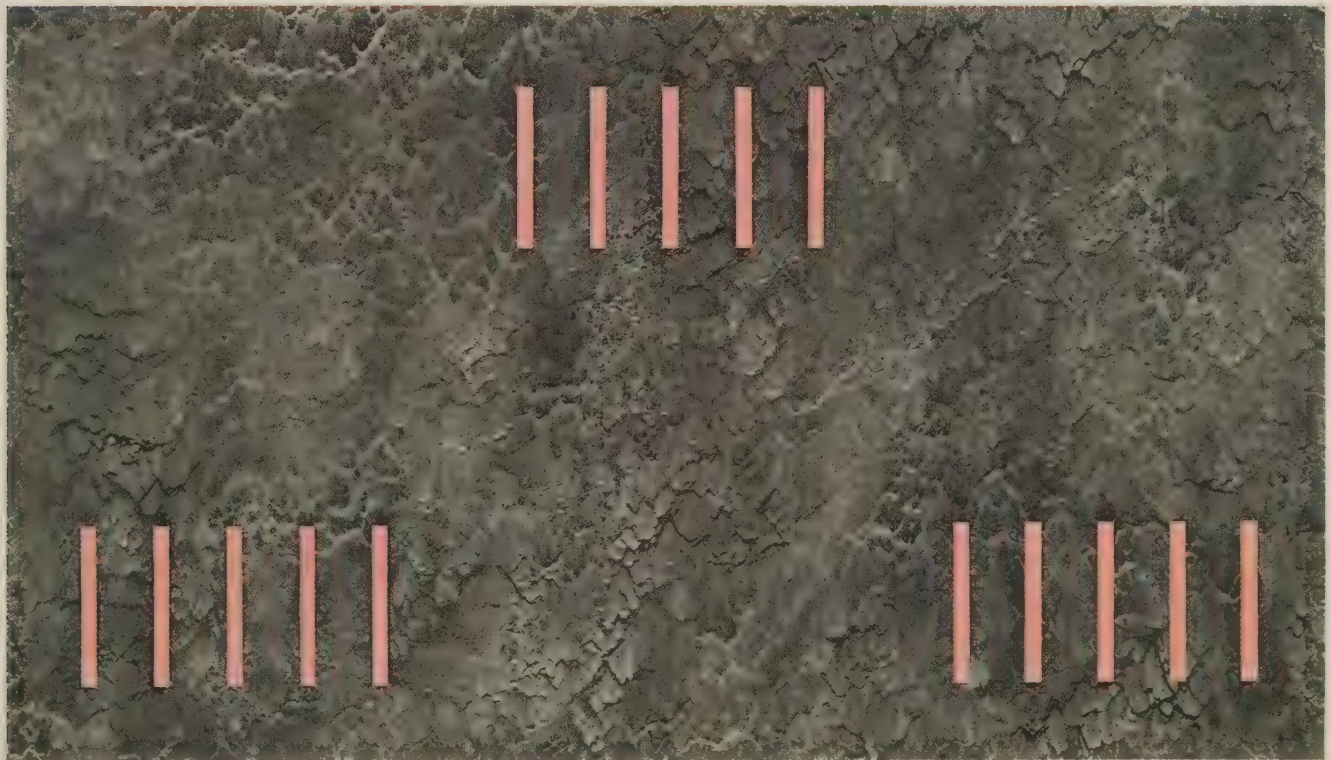


1871 light gauge

Armstrong NEWRAY INLAID LINOLEUM



light gauge 1872



light gauge 1873

Armstrong NEWRAY INLAID LINOLEUM

Combining the rugged durability of vinyl plastic with rich, clear colors, Armstrong Plastic Floors offer unlimited opportunities to create interiors of unusual beauty.

Armstrong Plastic Floors are available in both sheet and tile form. The sheet material, Armstrong Corlon, is made in five distinct types and in a variety of designs. The tiles, Armstrong Excelon, Estate Corlon and Custom Corlon, are illustrated in the resilient tile section, pages 116 to 143.

Each of these Armstrong Plastic Floors offers all the practical advantages found in vinyl plastics. Rich, fade-resisting color, exceptional long wear and easy maintenance, and the high resistance to the harmful action of oil, grease, alkali and household chemicals are a few of the outstanding qualities.

All types of sheet Corlon can be installed over suspended subfloors. Certain patterns of sheet Corlon are available with the exclusive Armstrong Hydrocord back—a revolutionary new backing which now makes possible the installation of sheet plastic flooring over grade-level subfloors. See pages 7 and 24.

Mosaic Corlon, another exclusive Armstrong sheet plastic styling, is available in Cushion-Eze foam back. This new Armstrong development, described on pages 7 and 24, is the ultimate in underfoot comfort, quiet and luxury.



PLASTICS

GRANETTE CORLON is a colorful sheet plastic flooring combining the rich beauty of plain colors with softly blended textured graining. Offered in a variety of pastel colors in six-foot width only. Ideal for counter tops as well as floors.see pages	100-101
TERRAZZO CORLON has all the beauty of classic terrazzo with its multicolored stone chip effect. Available in the six-foot width and in a wide selection of color combinations. Some patterns feature the Hydrocord back for grade-level installation.see pages	102-106
DECORESQ CORLON is another Armstrong exclusive in sheet plastic flooring in the six-foot width. It is a molded plastic featuring patterns of textured and geometric effects. Available in a choice of distinctively smart designs and colors.....see pages	107-109
MOSAIC CORLON offers a striking plastic floor design adapted from the artistic effects of hand-crafted mosaic tile floors. It is made with Armofelt back and with the new exclusive Armstrong Cushion-Eze foam back described on pages seven and twenty-four. Mosaic Corlon is available in the six-foot width in a wide selection of color harmonized patterns.see pages	110-112
ESTATE CORLON is a vinyl plastic flooring featuring a soft, modern striated design. In addition to its use as a flooring, Estate Corlon can be used as a counter-top surface. Available in 24", 30", 42", and 2-yard widths. Ideal for self-installation.see pages	113-115
EXCELON TILE Resilient tile sectionsee pages	125-128
CUSTOM CORLON TILE Resilient tile sectionsee pages	135-137
ESTATE CORLON TILE Resilient tile section.....see page	138



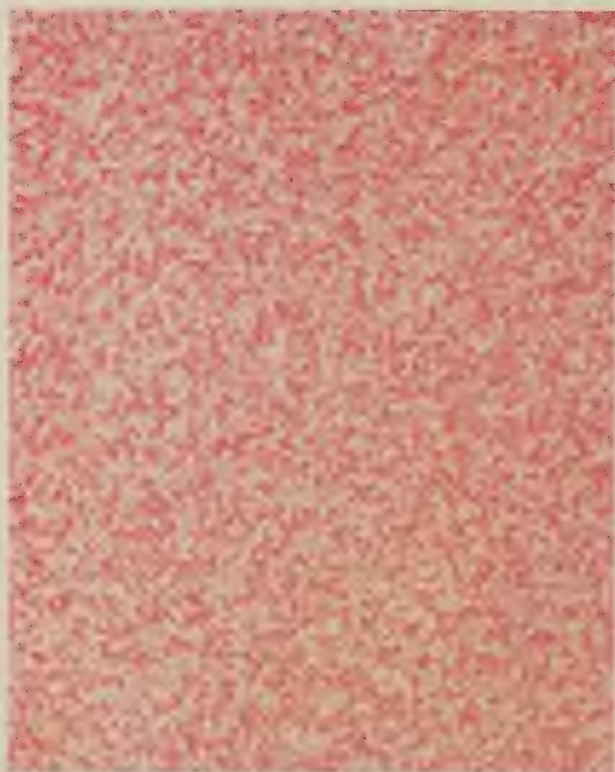
6180



6181



6182



6183

Armstrong GRANETTE CORLON



6184



6185



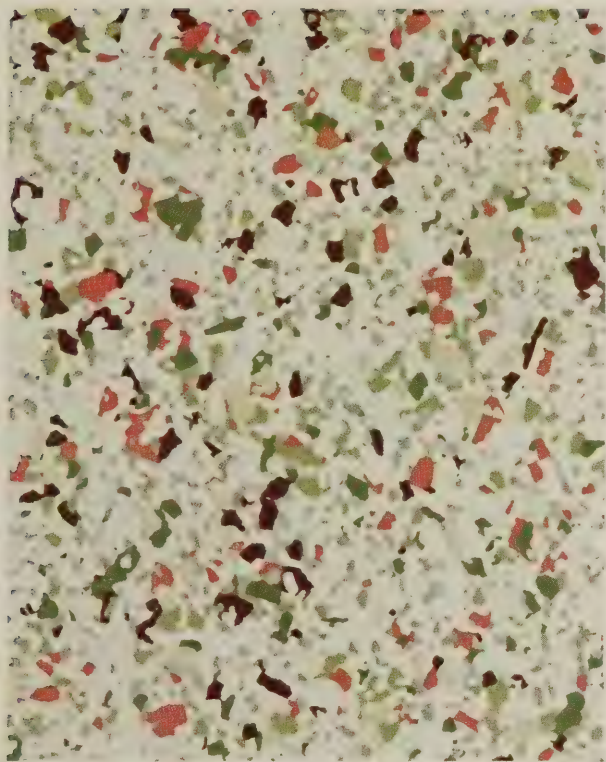
6186



6187

Armstrong GRANETTE CORLON



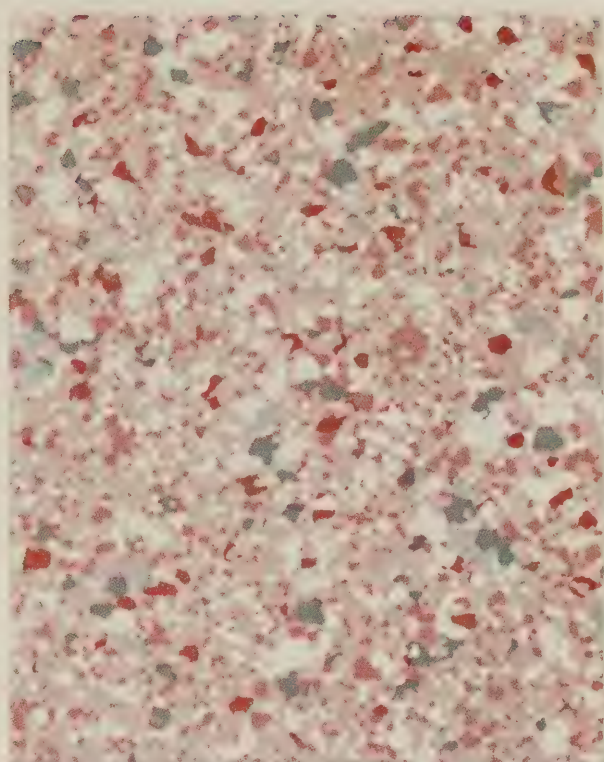


6200

Armofelt back

86200

Hydrocord back



6201

Armofelt back

86201

Hydrocord back



6202

Armofelt back

86202

Hydrocord back

Armstrong Terrazzo Corlon offers distinct decorator advantages. Its small-scale design features small chips of bright, clear colors scattered over richly colored backgrounds. These accent colors are inlaid into the material and are part of the vinyl wearing surface. The over-all appearance of this vinyl plastic flooring is that of classic terrazzo and provides a colorful foundation for almost any type interior. Terrazzo Corlon is a practical floor, too. It is easy to maintain and is long wearing.

The Terrazzo patterns identified with a figure 8 before the pattern number can be specified for on-grade installation. These patterns are supplied with the new exclusive Armstrong Hydrocord back described on pages 7 and 24. Hydrocord back is unaffected by alkaline moisture and can be safely installed on any grade-level subfloor. Armstrong Terrazzo Corlon with the new Hydrocord back is installed with Armstrong S-235 Hydrocord Cement.

Armstrong TERRAZZO CORLON



6203
Armofelt back

86203
Hydrocord back



6204
Armofelt back only



6205
Armofelt back

86205
Hydrocord back



6207
Armofelt back only

Armstrong TERRAZZO CORLON

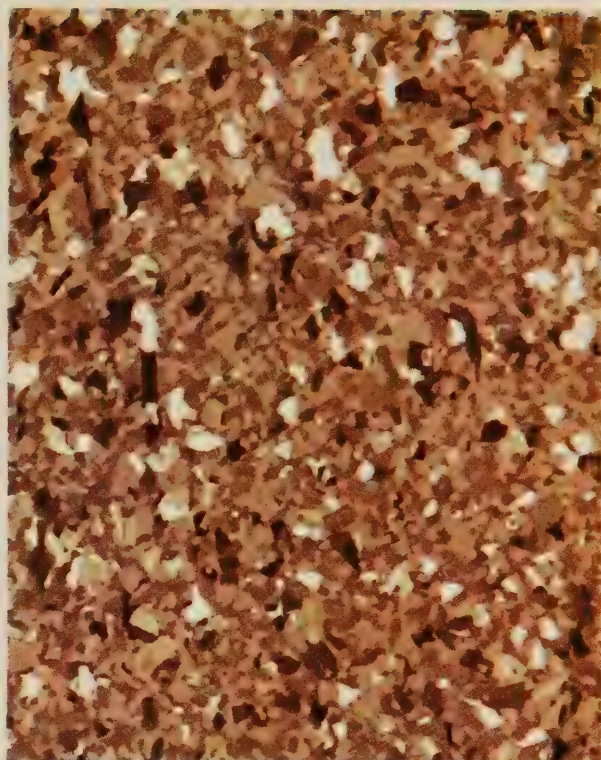


6208

with Armofelt Back

86208

with Hydrocord Back



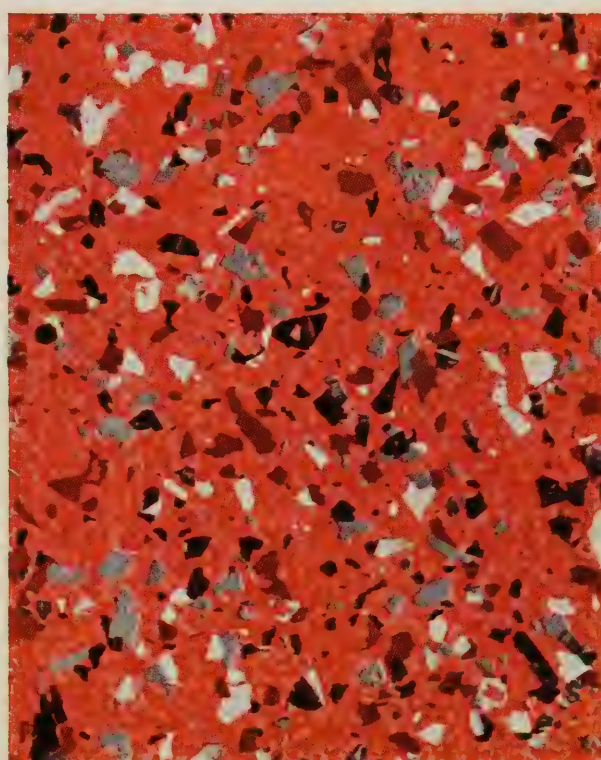
6209

with Armofelt Back only



6210

with Armofelt Back only



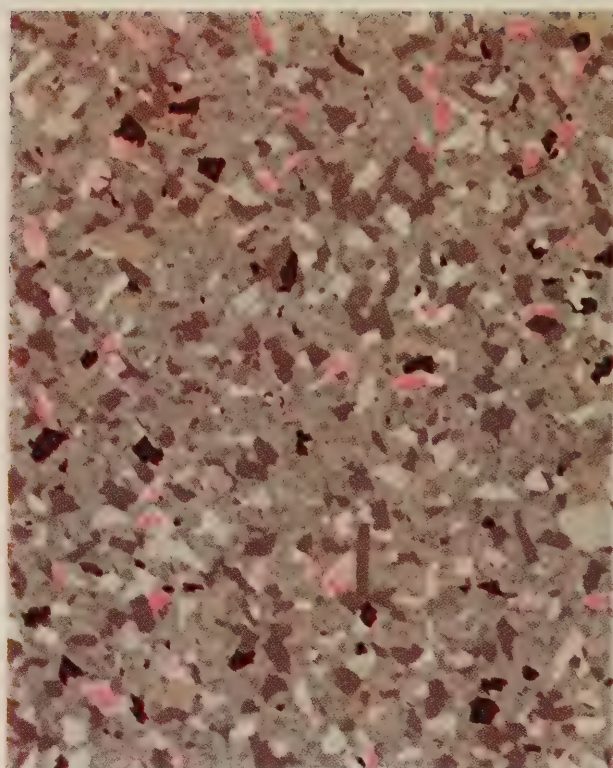
6211

with Armofelt Back only

Armstrong TERRAZZO CORLON

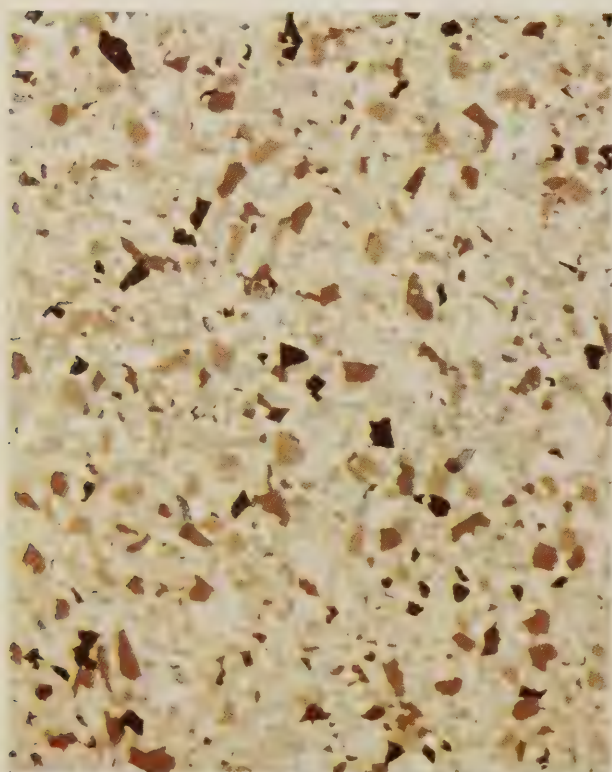


6212
with Armofelt Back only



6213
with Armofelt Back

86213
with Hydrocord Back



6214
with Armofelt Back

86214
with Hydrocord Back



6215
with Armofelt Back

86215
with Hydrocord Back

Armstrong TERRAZZO CORLON

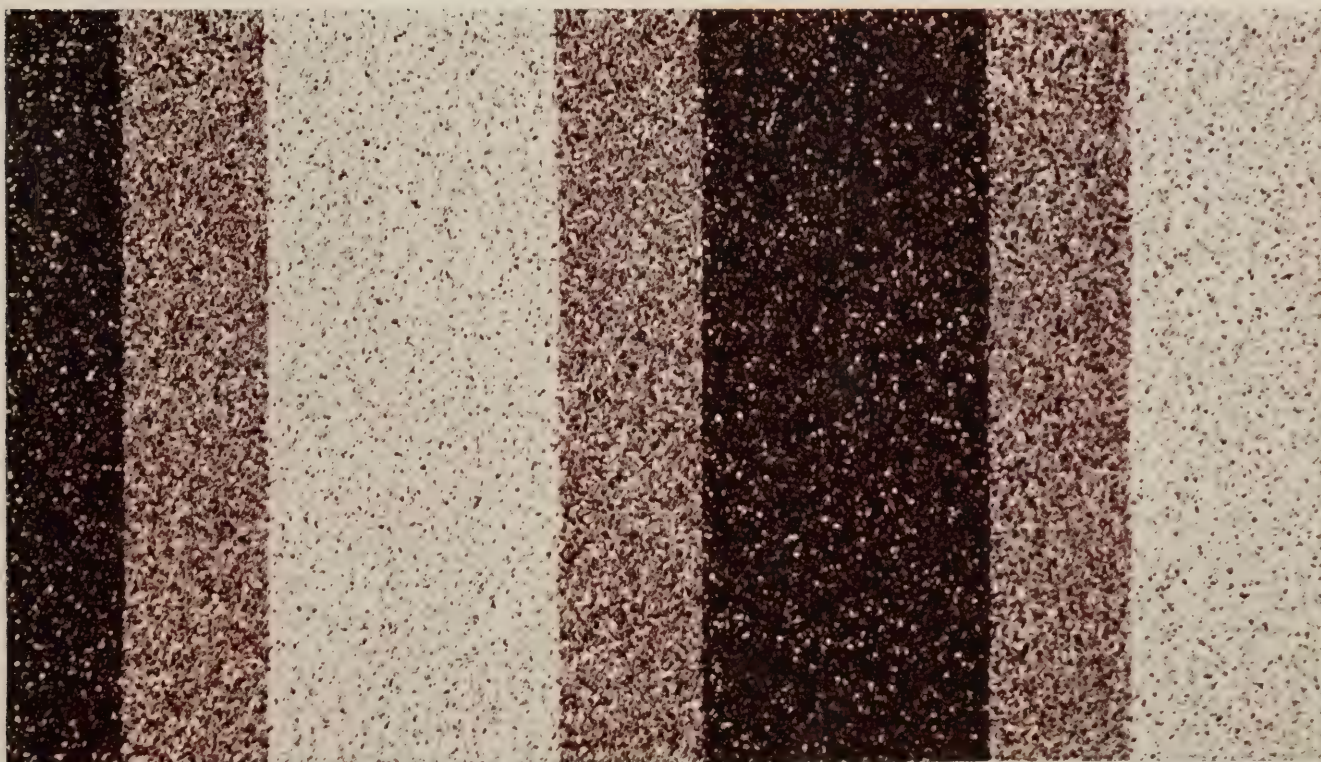


6300

with Armofelt Back

86300

with Hydrocord Back



6301

with Armofelt Back

86301

with Hydrocord Back

Armstrong DECORESQ CORLON



6320

with Armofelt Back only



6321

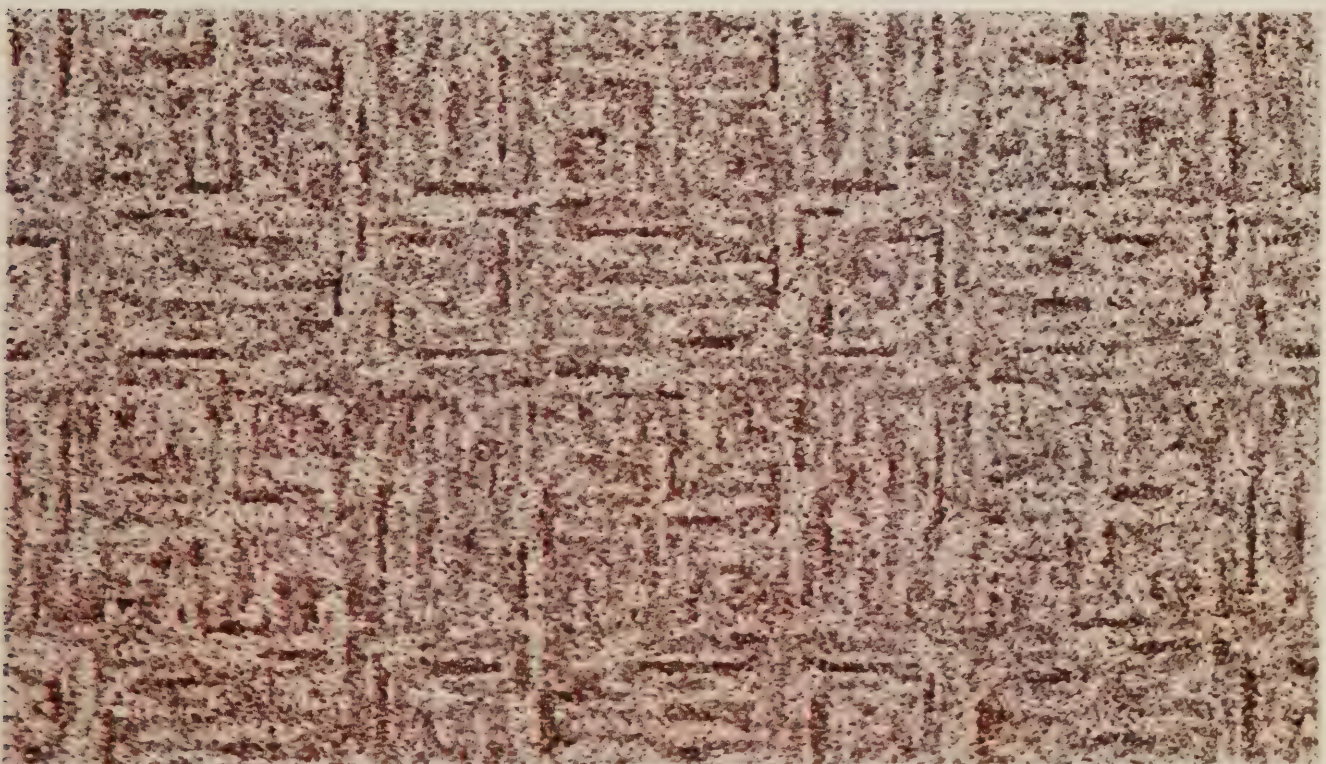
with Armofelt Back only

Armstrong DECORESQ CORLON



6340

with Armofelt Back only



6341

with Armofelt Back only

Armstrong DECORESQ CORLON

2 yards wide



6500

with Armofelt Back

96500

with Cushion-Eze Back

Armstrong Mosaic Corlon is a striking new plastic floor style. Its design is adapted from the artistic effects of hand-crafted mosaic tile floors. Small squares of deep, rich color are scattered in profusion to form a dramatic floor design. Its decorative beauty is further enhanced by the delicate color variations within the squares. While informal in appearance, Mosaic Corlon is adaptable to many interiors.

Armstrong Mosaic Corlon is manufactured by the molded process which inlays each square of color directly into the wearing surface of the material. It is made from vinyl plastic compounds developed by Armstrong to make this floor dimensionally stable, long wearing, easy to clean and resistant to alkali, greases, oils, and household chemicals.

Armstrong Mosaic Corlon is offered in two exclusive Armstrong backings — Armofelt and Cushion-Eze. Both types can be installed over suspended wood and concrete subfloors. See pages 7 and 24 for description.



In addition to its distinctive design, Armstrong Mosaic Corlon features the exclusive Armstrong Cushion-Eze Back. Cushion-Eze is a layer of foam applied to the back of the material which actually gives a feeling of walking on air.

Armstrong MOSAIC CORLON



6501

with Armofelt Back

96501

with Cushion-Eze Back



6502

with Armofelt Back

96502

with Cushion-Eze Back



6503

with Armofelt Back

96503

with Cushion-Eze Back



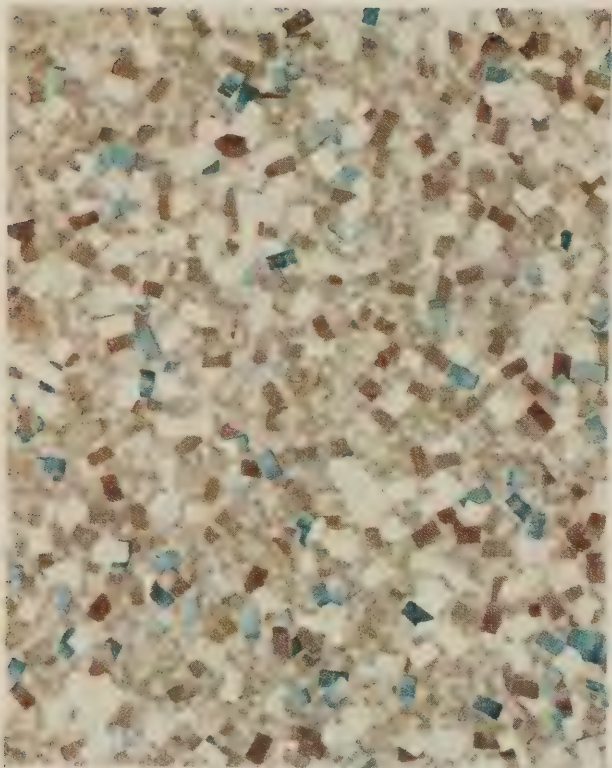
6504

with Armofelt Back

96504

with Cushion-Eze Back

Armstrong MOSAIC CORLON



6505
with Armofelt Back

96505
with Cushion-Eze Back



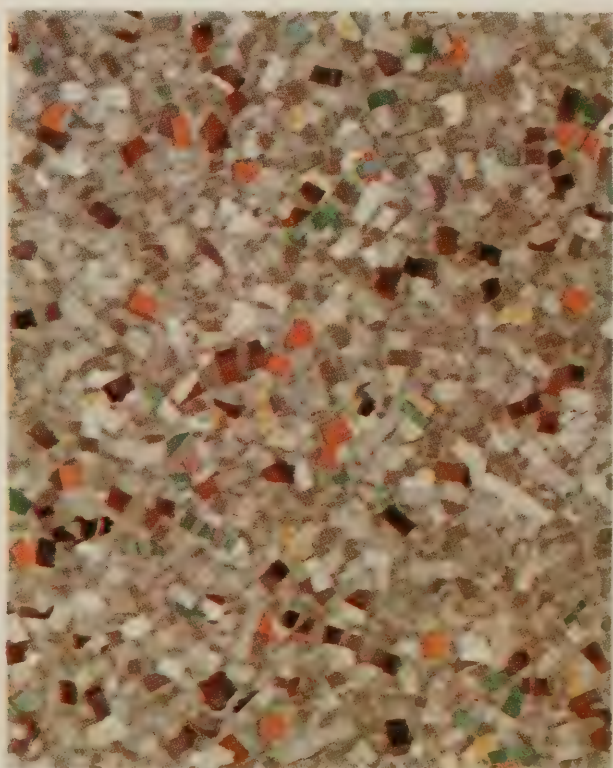
6506
with Armofelt Back

96506
with Cushion-Eze Back



6507
with Armofelt Back

96507
with Cushion-Eze Back



6508
with Armofelt Back

96508
with Cushion-Eze Back

Armstrong MOSAIC CORLON



6400



6401



6402

Armstrong Estate Corlon is a new styling in Armstrong vinyl plastic floors. It features a distinctive striated design with soft sweeping veins of color which gives the floor an allover effect of good taste and clean-cut styling. Estate Corlon lends itself well to almost any type of interior decoration and can be also used as a vinyl plastic counter-top material.

Where limited budget is an important consideration, Estate Corlon offers all of the service and maintenance advantages of Armstrong Terrazzo and Decor-esq Corlon at minimum cost. It is dimensionally stable, has high resistance to household greases and alkalis, and is exceptionally easy to maintain.

Armstrong Estate Corlon is made in eleven attractive patterns in four widths—24" for home mechanics, 30" and 42" for counter-top use, and 2 yards wide for professional installation. It is also available in 9" x 9" tiles as shown in the resilient tile section.

Armstrong ESTATE CORLON



6403



6404



6405



6406

Armstrong ESTATE CORLON



6407



6408



6409



6410

Armstrong ESTATE CORLON

Armstrong Resilient Tiles offer a variety of fashionable floors developed and designed to meet particular flooring requirements. Each type combines colorful beauty and exceptional durability together with the characteristics needed to solve certain floor problems. Regardless of the characteristics of the individual products each is manufactured with the same high-quality standards which make them exceptional values.

In addition to their beauty and service qualities, Armstrong Resilient Tiles offer freedom of design and the advantages of custom designing at no added cost. Tile designs can be planned especially for a particular room. Large designs in several colorings may be used in large areas. Simple designs are more effective in small rooms. Transverse stripes are used to make a room appear wider. Stripes running the length of the room make it appear longer. A few design ideas and suggestions are shown on pages 142 and 143.

The selection of an Armstrong Resilient Tile Floor should depend on just what job the floor is to do. Cost, appearance, wear, maintenance, and floor area are all important considerations. The wide selection of types available in these quality resilient tiles makes it possible to select a flooring to suit any need or decorative preference.



RESILIENT TILES

ASPHALT TILE A colorful, long-wearing floor for use over suspended, grade-level and below-grade areas where low cost is a prime factor see pages 118-124

EXCELON TILE An exclusive Armstrong vinyl-asbestos flooring for use over all types of sub-floors. Economical and resistant to grease, alkali, and household chemicals see pages 125-128

CORK TILE Features all the beauty of natural cork. For suspended floors and grade-level floors when installed according to Armstrong specificationssee page 129

CUSTOM VINYL CORK TILE A new type of flooring that combines the durability of vinyl plastic with the beauty of corksee page 129

RUBBER TILE A richly styled flooring for use in areas where a smart, luxurious appearance is desired. Can be used over suspended, grade-level and below-grade subfloors . see pages 130-132

LINOTILE A beautiful resilient flooring unmatched for long wear and ease of maintenance. Has exceptionally high resistance to indentation and abrasion. For suspended floors only. Exclusive with Armstrong see pages 133-134

CUSTOM CORLON TILE An exclusive Armstrong Flooring which offers the ultimate in beauty and luxury. Can be used over suspended, grade-level and below-grade subfloors. Offered in two styles — Burl Grain and Imperial see pages 135-137

ESTATE CORLON TILE Sheet Corlon offered in 9" x 9" tiles see page 138

DECORAY LINOLEUM TILE Decoray Linoleum in 9" x 9" and 6" x 12" tiles ...see page 139

ROYELLE LINOLEUM TILE Royelle Linoleum offered in 9" x 9" tiles see page 140

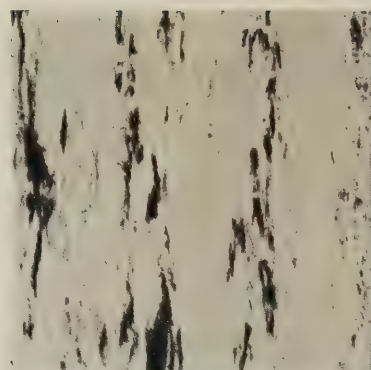
SUBURBAN LINOLEUM TILE Suburban Linoleum offered in 9" x 9" tiles see page 141



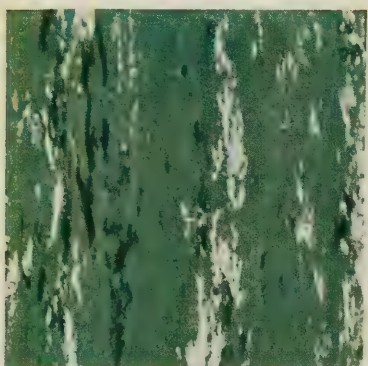
†A-200 Pompeian Red



†A-210 Black



D-900 Ivory



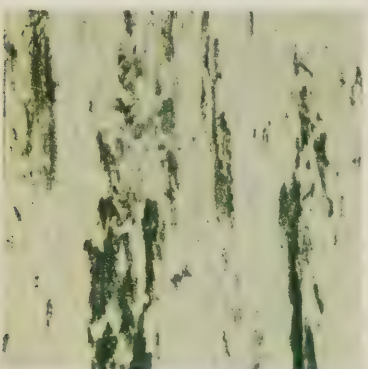
C-902 Foam Green G2-902



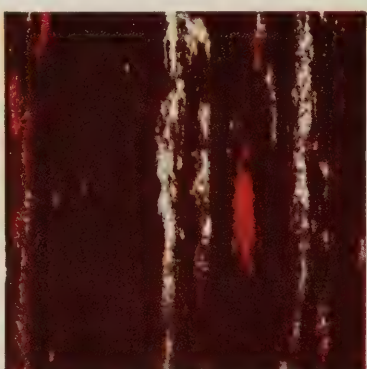
B-905 Ebony



C-907 Jasper Green



D-911 Seaspray Green



B-918 Cedar

G2-918



B-919 Tokay

Armstrong Asphalt Tile is a long-wearing resilient floor especially designed for homes, offices, stores, and other areas where low cost is an important factor. In addition to its economy, it has handsome styling and rich coloring which combine to make up a floor of outstanding beauty. Precision die-cut for perfectly straight edges and square corners, it can be installed with tight seams to form a smooth, easy-to-maintain floor. Its resistance to alkaline moisture makes it an ideal flooring for basements and grade-level areas as well as for suspended floors. Armstrong Asphalt Tile is available in four distinct stylings—Standard (straight grain), Spatter, Woodtone and Corkstyle. Standard and Woodtone are made in 1/8" and 3/16" gauges. Spatter and Corkstyle are available in 1/8" gauge only. All are offered in 9" x 9" tiles. Greaseproof is available in selected colors prefixed "G2".



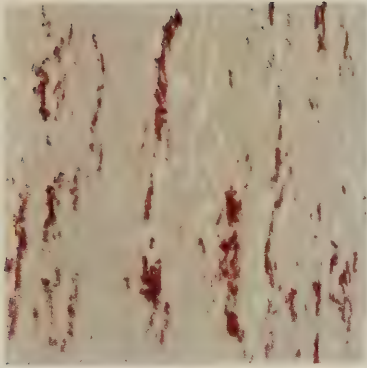
C-924 Cinnabar

G2-924

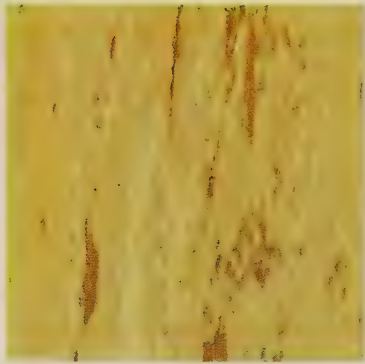
Armstrong ASPHALT TILE

1/8" and 3/16" gauges
9" x 9"

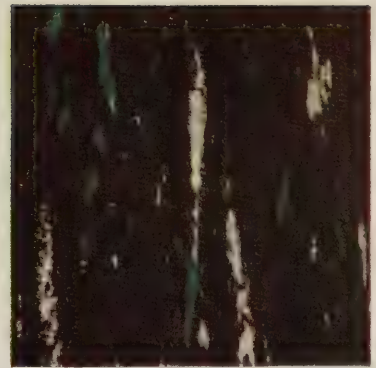
† Also in 18" x 24" size



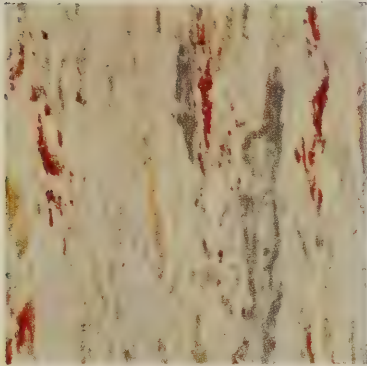
G2-926 Palomino Beige C-926



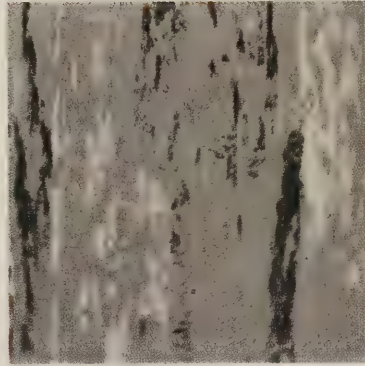
Goldenrod D-927



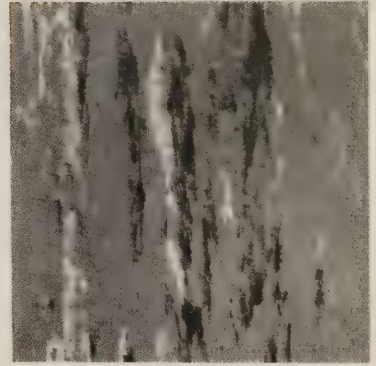
Antique Green B-935



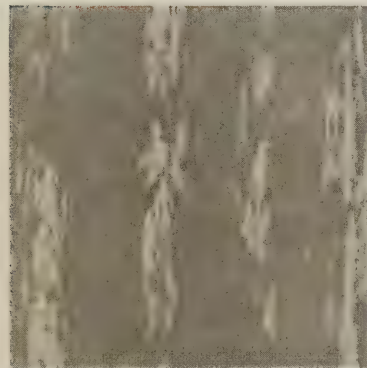
Tennessee D-942



G2-944 Pewter Gray C-944



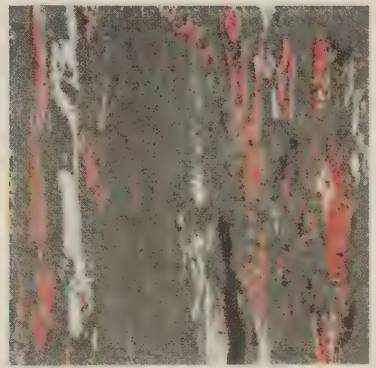
Pearl Gray C-946



Gray Taupe C-947



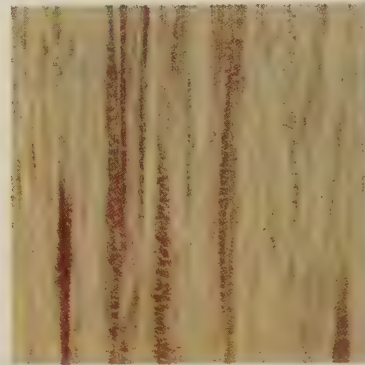
Lagoon Blue D-952



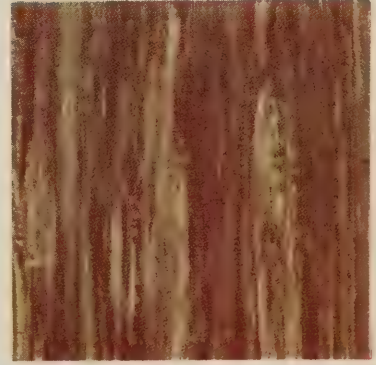
Cameo Gray C-961



Corinthian Red D-964



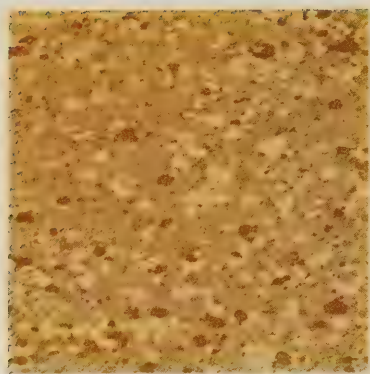
Light Woodtone D-970



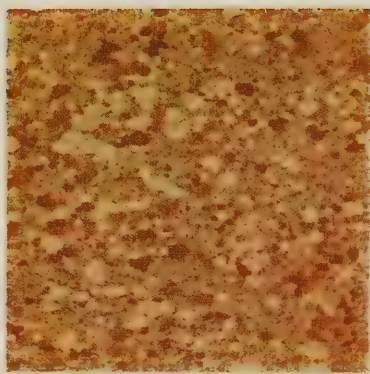
Dark Woodtone C-971

Armstrong ASPHALT TILE

1/8" and 3/16" gauges
9" x 9"



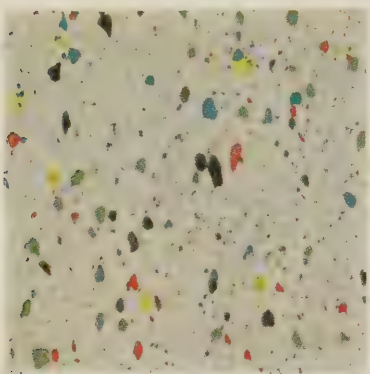
974 Blond Corkstyle



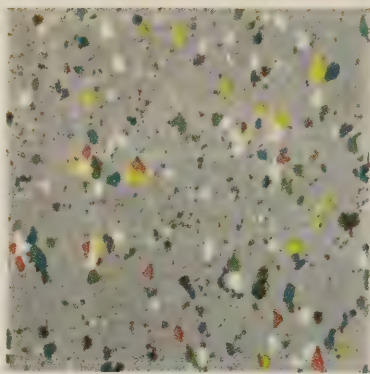
975 Light Corkstyle



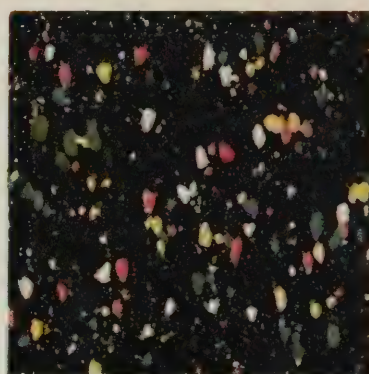
976 Dark Corkstyle



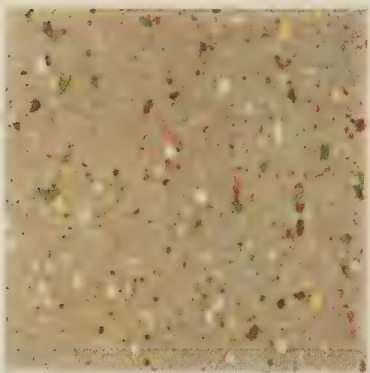
D-990 Gardenia—*spatter series*



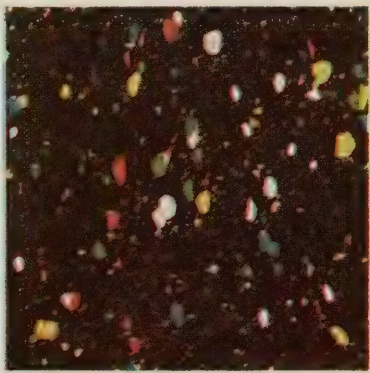
C-991 Gray Dawn—*spatter series*



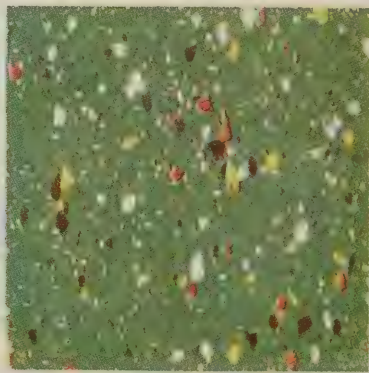
B-992 Onyx Black—*spatter series*



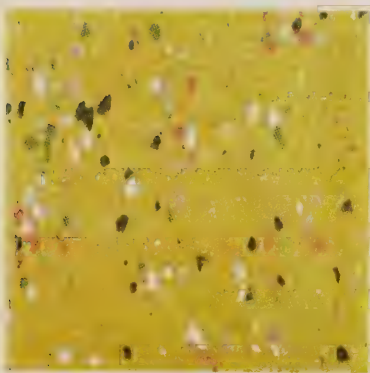
C-993 Sandrift—*spatter series*



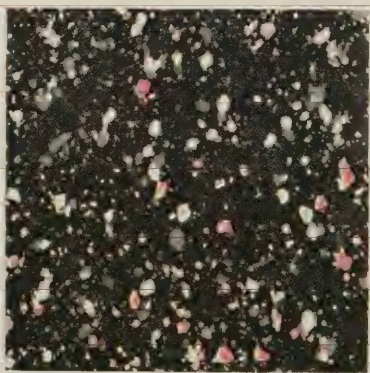
B-994 Cordovan—*spatter series*



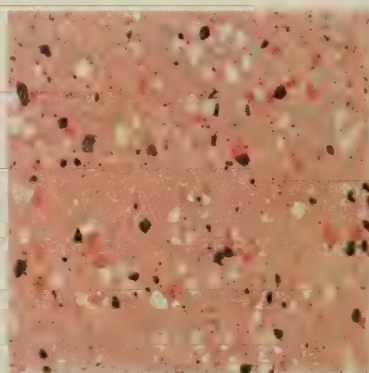
C-995 Cactus Green—*spatter series*



D-996 Golden Yellow—*spatter series*



C-997 Charcoal—*spatter series*



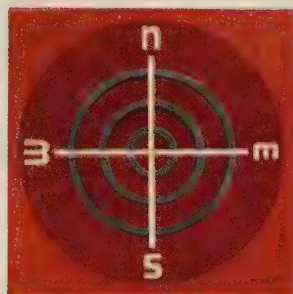
D-998 Pink—*spatter series*



Wild Duck 500



Cocktail 501



Compass 502



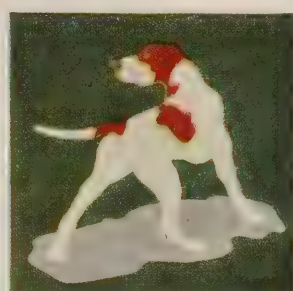
Sunburst 506



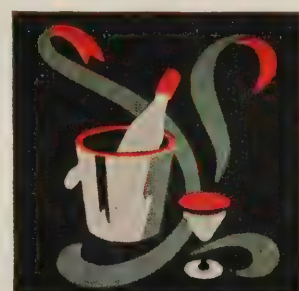
Target 508



Anchor 510



Pointer 511



Champagne 514



Top Hat 515



Sailboat 516



Sailfish 517



Four Aces 520



Siesta 521



Lyric 522



Sandtrap 523



Palm Tree 524

Armstrong Asphalt Die-Cut Insets offer many opportunities to give residential and commercial floors an air of individuality at low cost. These factory die-cut insets are available in the colors illustrated in 18" x 18" size only and in both 1/8" and 3/16" gauges. They can also be ordered in the special inset colors shown on page 122 at a slight added cost.

Armstrong Asphalt Die-Cut Insets are also made in alphabet characters, numerals, punctuation marks, and traffic directors. These are available in any two colors of asphalt tile. All backgrounds are 9" high—inset widths in proportion to character widths.

Basketball court units are also available in Die-Cut Insets. Each court unit consists of all official straight lines and restraining circles in plain white, yellow, or black colors and in sizes to meet requirements of college, high school, and junior high school courts.

Armstrong ASPHALT TILE DIE-CUT INSETS

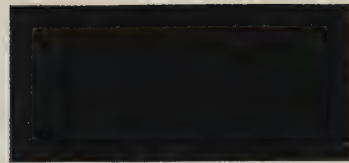
1/8" and 3/16" gauges
18" x 18"



A-200 Pompeian Red



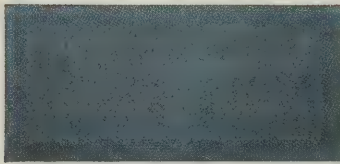
C-204 Venetian Red



A-210 Black



D-231 Regal Blue



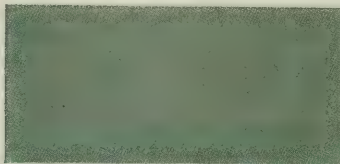
D-235 Azure Blue



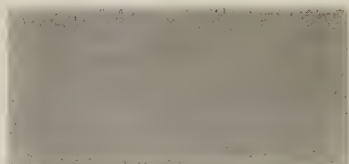
D-246 Yellow



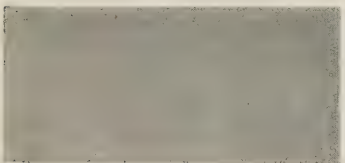
C-251 Dark Green



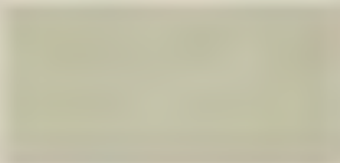
C-257 Light Green



C-265 Light Gray



C-266 Steel Gray



D-270 White



D-275 Garnet

These solid colors are available for use in custom, standard hand-cut, and die-cut insets. The hand-cut insets shown on page 123 may be ordered in any combination of these inset colors. Factory die-cut insets can be had in these colors at a slight added cost.

Five of them, Nos. D-231, D-235, C-251, C-265, and C-266, are made especially for inset work and are not supplied for field tile, borders, or feature strips. Nos. C-204, D-246, C-257, D-270, and D-275 are available as feature strips and insets but not as field tile or border material.

Armstrong Asphalt Tile Inset Colors are made in both 1/8" and 3/16" gauges.

The Shuffleboard inset shown at right is factory die-cut, available only in the colors illustrated.



560 Standard Shuffleboard Unit

Armstrong ASPHALT TILE INSET COLORS



Florist Delivery 580

sizes 27", 36", and 63"
2 colors



Cocktail 581

sizes 27", 36", and 63"
4 colors



Dental Caduceus 582

sizes 18", 27", 36", and 63"
5 colors



Script Initials 583

sizes 18", 27", and 36"
2 colors



Medical Caduceus 585

sizes 18", 27", 36", and 63"
3 colors



Men's Shop Design 586

sizes 18", 27", 36", and 63"
5 colors



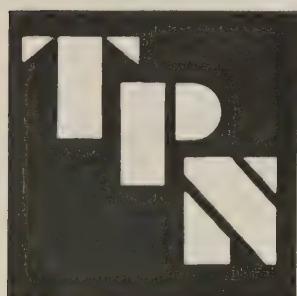
American Legion 587

sizes 27", 36", and 63"
3 colors



Elks Lodge Emblem 588

sizes 27", 36", and 63"
4 official colors



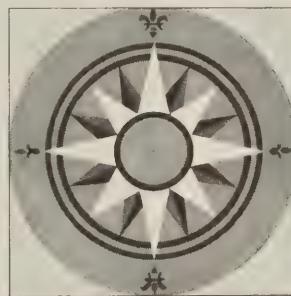
Standard Monograms 589

sizes 18", 27", and 36"
2 colors



Mortar and Pestle 590

sizes 18", 27", 36", and 63"
3 colors



16-Point Compass 591

sizes 18", 27", 36", and 63"
4 colors



Anchor 593

sizes 18", 27", 36", and 63"
3 colors



Treble Clef 594

sizes 18", 27", 36", and 63"
3 colors



Manhattan 599

sizes 18", 27", and 36"
3 colors

Armstrong Standard Hand-Cut Insets are available in certain popular trade-marks, monograms, and insignia. They may be ordered in any of the solid inset colors shown on page 122 at no extra cost. In addition to the insets shown here, modern block or script alphabet characters are also made in Asphalt Tile Standard Hand-Cut Insets.

Sizes available are 9" x 9", 12" x 12", and 18" x 18". Limit one character to each block.

Armstrong ASPHALT TILE STANDARD HAND-CUT INSETS

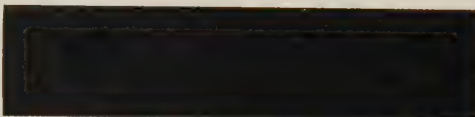
1/8" and 3/16" gauges

TOP-SET ASPHALT COVE BASE

Armstrong Top-Set Asphalt Cove Base makes a practical non-dirt-catching baseboard treatment for all kinds of resilient floors. It is available in 4" and 6" heights in sections 48" and 36" long. Made of a thermoplastic composition, Armstrong Top-Set Asphalt Cove Base can be fitted around curves and sharp corners by heating the material slightly on the job. Available in the two colors shown below.



CB-206 Havana



CB-210 Black



C-204 Venetian Red



A-210 Black



C-257 Light Green



D-246 Yellow



D-270 White

ASPHALT TILE FEATURE STRIPS

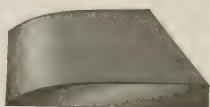
These striking colors are used to accent floors of Armstrong Asphalt Tile. Available in the six colors shown in strips 1" wide and 24" long. 2" and 3" in widths made on special order.



D-275 Garnet

ASPHALT BEVELED EDGING S-18

For finishing exposed edges of asphalt tile floors at entrances and doorways. Made in strips 1/8" or 3/16" thick, 1" wide and 36" long. Available in black only.

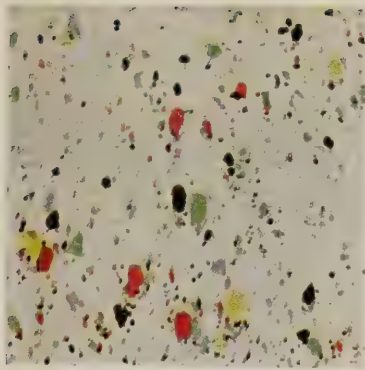


Armstrong CONDUCTIVE ASPHALT TILE

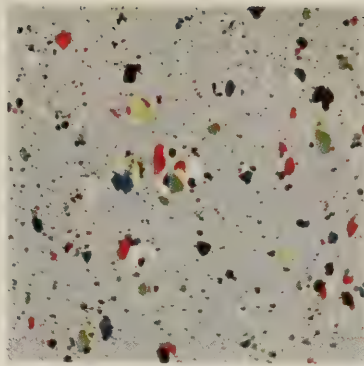
Armstrong Conductive Asphalt Tile minimizes the danger of explosions caused by static electrical discharges. This safety feature makes it especially suitable for industrial areas where explosion hazards exist. It has a smooth, non-dusting and non-sparking surface. It may be installed on suspended and grade-level floors but should not be used below grade. Where both grease and static electricity are problems, Armstrong Greaseproof Conductive Tile should be used. Both types are available in 18" x 24", 1/8" and 3/16" gauges, black only.

Armstrong Conductive Asphalt Tile meets all the requirements listed in U. S. Government Safety Bulletins for powder plants. However, it should not be used in hospital operating rooms or paint spray rooms.

Armstrong ASPHALT TILE ACCESSORIES



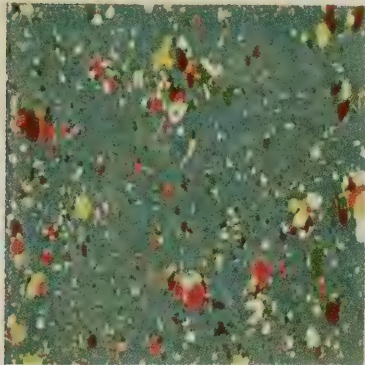
spatter series — Andover White 735



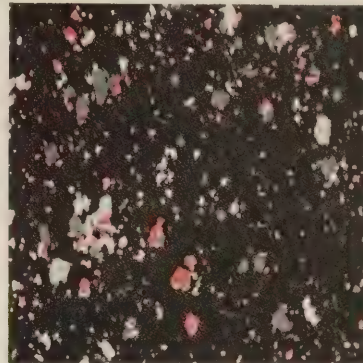
spatter series — Bedford Gray 736



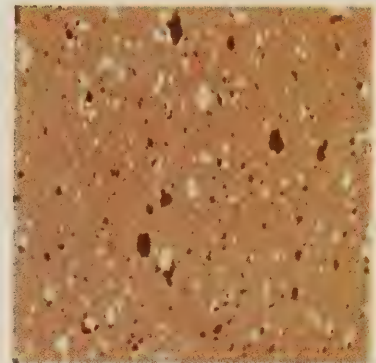
spatter series — Cape Cod Beige 737



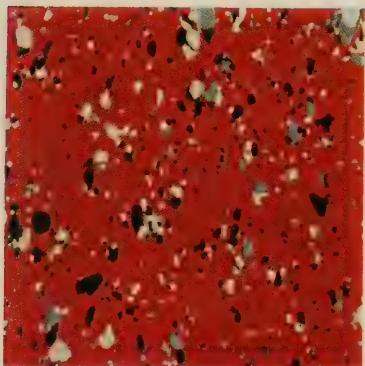
spatter series — Lexington Green 738



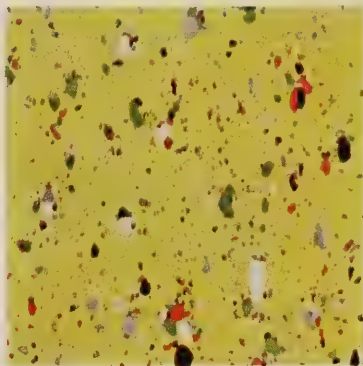
spatter series — Providence Charcoal 739



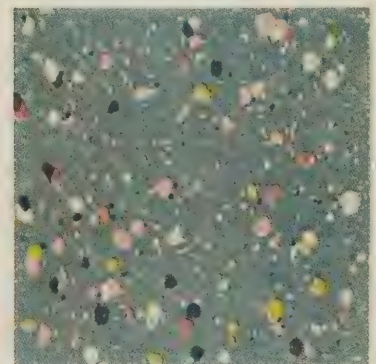
spatter series — Arlington Cedar 740



spatter series — Exeter Red 741



spatter series — Concord Yellow 742



spatter series — Norwich Turquoise 743

Armstrong Excelon Tile is a specially formulated plastic tile consisting of pure vinyl resins fortified with asbestos fibers. While it is priced considerably under the other Armstrong plastic tiles, Excelon Tile has many practical advantages. It can be installed over suspended, on-grade and below-grade concrete floors as well as suspended wood floors. It has high resistance to grease, oils, alkali and household chemicals.

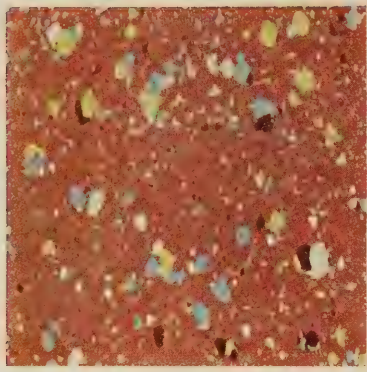
Excelon Tile is offered in five distinct stylings—Spatter, Standard (straight grain), Woodtone, Cork-

style, and Designers Series. In each of these stylings the colors are selected to accent or harmonize with almost any decorative scheme. In addition to their rich brilliance, these colors are also fade resistant.

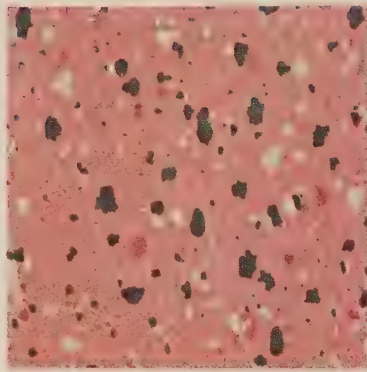
Excelon Tile offers many opportunities for unusual floor treatments. Because all patterns are color harmonized, it is possible to combine stylings and colors for striking floor effects. Excelon Tile is ideal for home installation since the Service Gauge can be cut with scissors. Available in the gauges indicated.

Armstrong EXCELON TILE

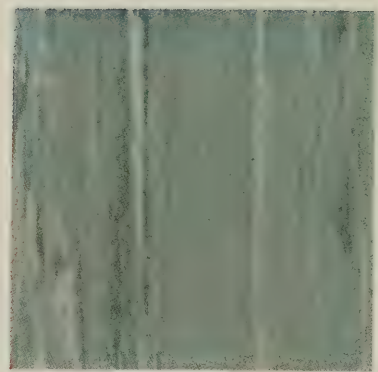
9" x 9"
service gauge only



*744 Bangor Copper—*spatter series*



*745 Plymouth Pink—*spatter series*



760 Mint Green—*designers series*



761 Silver Gray—*designers series*



762 Sand Beige—*designers series*



763 Rose Taupe—*designers series*



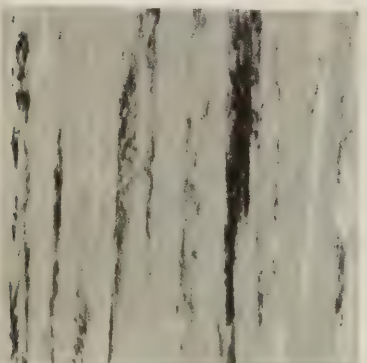
764 Mauve Taupe—*designers series*



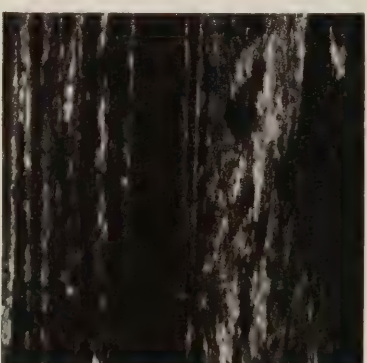
765 Sienna Copper—*designers series*



770 Seneca White



771 Mohawk Gray



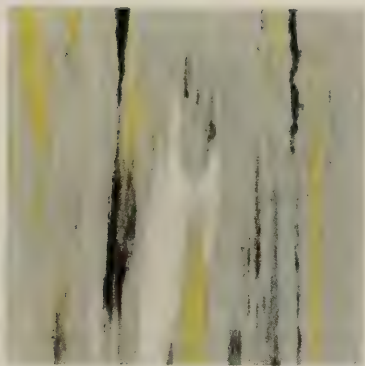
772 Comanche Black



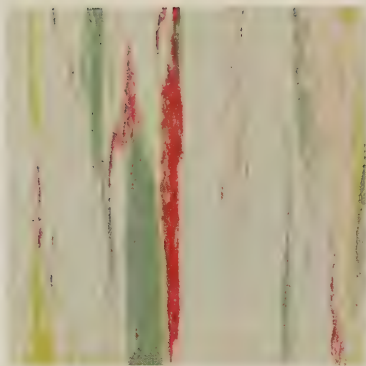
774 Seminole Yellow

Armstrong EXCELON TILE

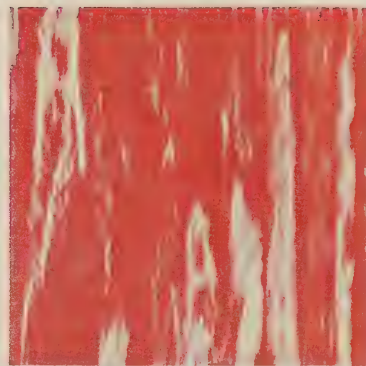
9" x 9"
1/8" and service gauges
*service gauge only



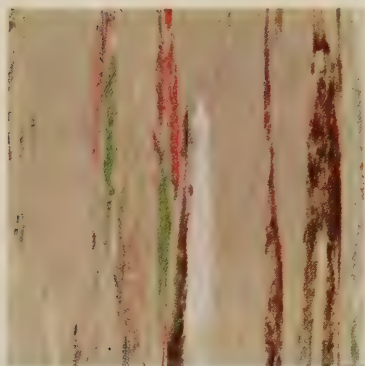
Aztec Gray 775



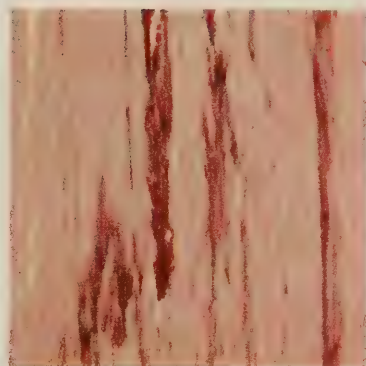
Cherokee White 776



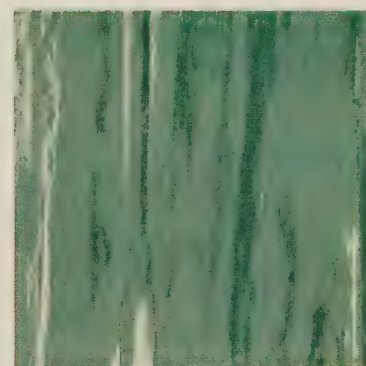
Apache Red 777



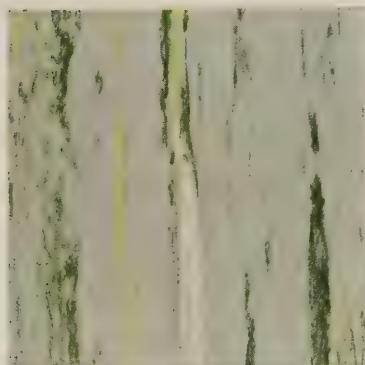
Pawnee Beige 778



Mohican Cedar 779



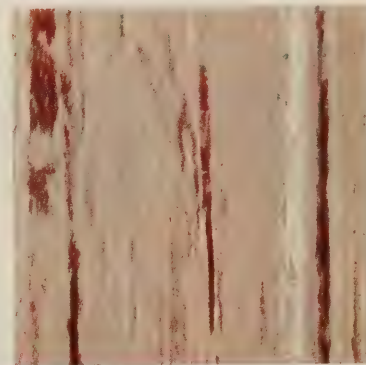
Osage Green 780



Navajo Gray 781



Sioux Pink 782



Iroquois Tan 783



Choctaw Green 784



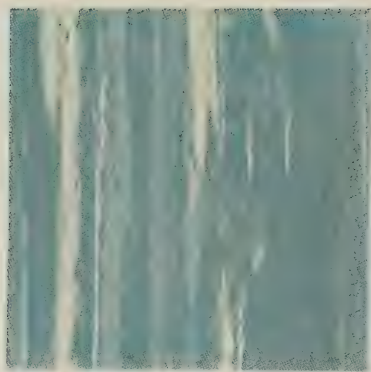
Zuni Brown 785



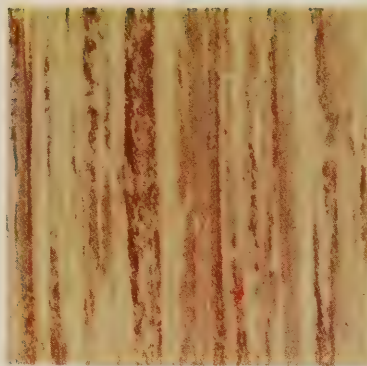
Mohave Charcoal 786

Armstrong EXCELON TILE

9" x 9"
1/8" and service gauges



787 Powhatan Turquoise



788 Light Woodtone



789 Dark Woodtone



*797 Medium Corkstyle

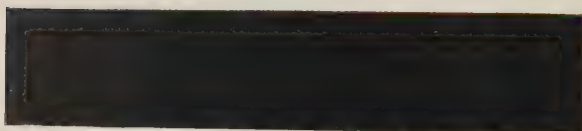


*798 Light Corkstyle



*799 Dark Corkstyle

9" x 9"
1/8" and service gauges
*service gauge only



790 Plain Black

791 Plain White



792 Plain Red



793 Plain Yellow

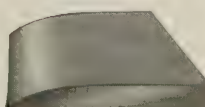


794 Plain Green



795 Plain Brown

Armstrong Excelon Feature Strips are made 24" long and 1" wide, in 1/8" and 1/16" Service Gauge. Feature strips are used various ways to individualize Excelon Tile Floors.



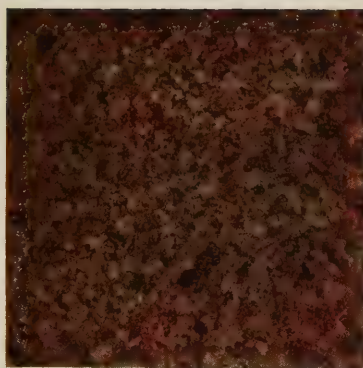
**EXCELON BEVELED
EDGING S-19**
Service Gauge, 1" wide.
Plain Black only

Armstrong EXCELON FEATURE STRIPS

1" wide, 24" long
service gauge and 1/8" gauge



Mocha Tan 410
Beveled and square edge



Coconut Brown 411
Beveled and square edge

CORK TILE

The softly blended natural cork tones of Armstrong Cork Tile make an ideal base for modern and conventional decorating schemes. In addition to its use over suspended floors, Armstrong Cork Tile can be installed on grade level if installed according to Armstrong installation specifications.



Design 1300



Design 1010

CUSTOM CORK TILE

Armstrong Custom Cork Tile offers opportunities to create interesting custom effects in this rich-looking flooring. The special factory-packaged tile sizes can be combined to form a variety of attractive floor designs at standardized prices.

The 1300 series consists of 3" x 12" square-edged rectangles equally divided between light and dark shades. These tiles can be used to form a number of highly decorative floor designs.

The 1010 series consists of light-colored nine-inch octagonal tiles and dark three-inch squares to create a handsome over-all custom floor effect.



Light 1005

CUSTOM VINYLKORK TILE

Armstrong Custom Vinylcork Tile combines easy maintenance qualities of vinyl with the rich beauty of natural cork. The vinyl binders are fused to the cork particles under tremendous pressure. This molds them into a flooring material of unusual beauty and high resistance to wear and indentation. Armstrong Custom Vinylcork Tile features large cork particles which give the floor an entirely new and dramatic appearance. A final vinyl coating is fused over the wearing surface and edges to give it additional beauty and long wear. In 9" x 9" beveled tile, 1/8" gauge.

 **Armstrong CORK TILE**

Cork Tile—1/8", 3/16", and 5/16" gauges

Custom Cork Tile—3/16" gauge

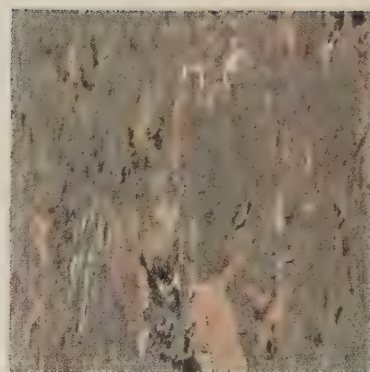
Custom Vinylcork Tile—1/8" gauge beveled



609 Ecruette



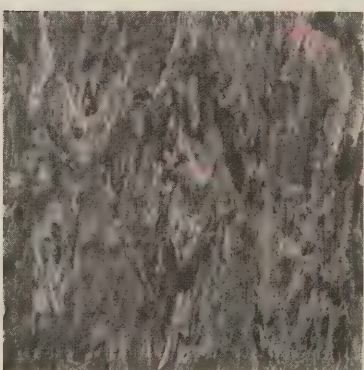
610 Beige Taupe



611 Coralette



613 Black White



614 Charcoal Pink



622 Grecian Pink

Armstrong Rubber Tile is distinguished by its clear brilliance of color and the decorative beauty of its burl graining. It is especially appropriate for today's decorating trends which favor use of bright, yet softly toned, colors in richly styled interiors.

Armstrong Rubber Tile is made of high-grade rubber, reinforced for greater durability and long wear. The colors go all the way through each tile and won't wear off or lose their luster. This tough resilient floor will take furniture loads up to 200 pounds per square inch without indenting. The natural resilience of high-quality rubber is retained in the manufacture of Armstrong Rubber Tile. Its cushioning action makes the floor comfortable to stand on and helps to muffle the sound of footsteps.

Armstrong Rubber Tile can be installed on grade level with Armstrong No. S-104 Chemical-Set Waterproof Cement or No. S-235 On-Grade Cement. It can also be installed below grade when Armstrong S-104 Chemical-Set Cement is used.



Armstrong RUBBER TILE

1/8" and 3/16" gauges
6" x 6", 9" x 9", 12" x 12", 18" x 36"



Napoleon Gray 625



designers series—Opal Taupe 630



designers series—Mist Green 631



designers series—Puritan Gray 632



designers series—Mauve Blush Tan 633



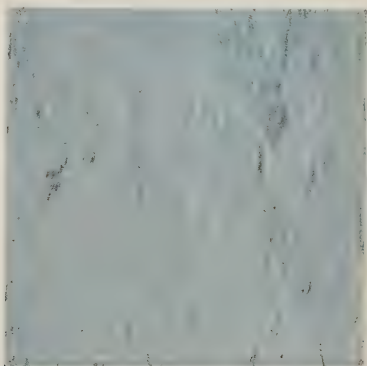
designers series—Blue Turquoise 634



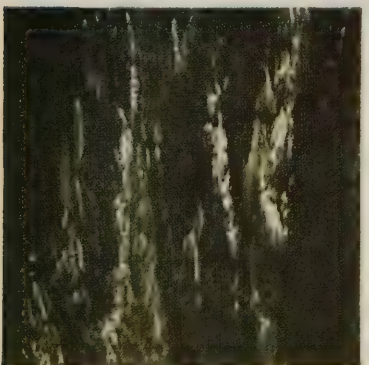
designers series—Ember Copper 635



designers series—Mimosa Yellow 636



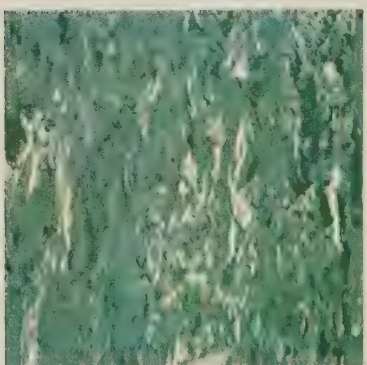
designers series—Gray Blue 637



Cypress Green 649



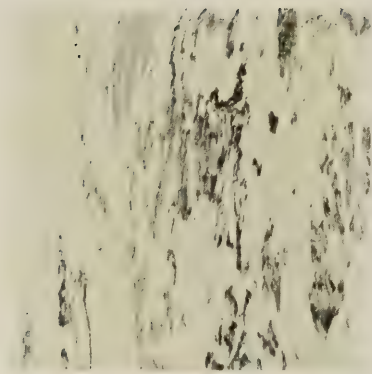
White Jade Green 651



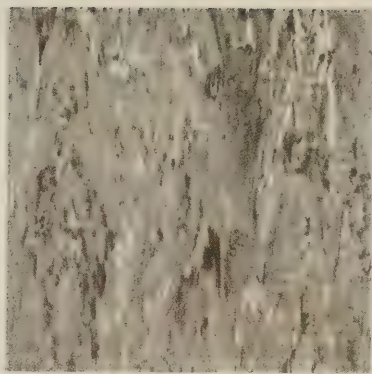
Jade Green White 652

Armstrong RUBBER TILE

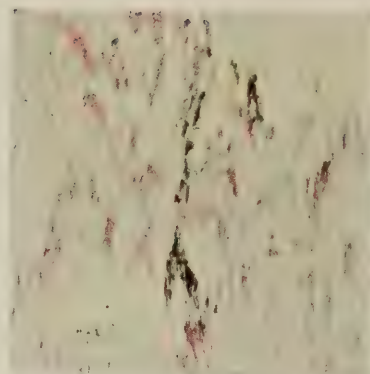
1/8" and 3/16" gauges
6" x 6", 9" x 9", 12" x 12", 18" x 36"



653 White Black



656 Silver Gray



664 White Ruby Red



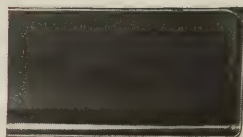
665 Ruby Red White



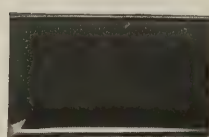
695 Plain Black

In any fine interior, a floor of Armstrong Rubber Tile provides a rich background for the furnishings. Available in 6" x 6", 9" x 9", 12" x 12", and 18" x 36" tile sizes in both 1/8" and 3/16" gauges.

Armstrong Top-Set Rubber Cove Base is made in 4" and 6" heights and 36" long. De Luxe Plain Colors, marked with an asterisk (*) are made in 4" height only. Internal corners and end pieces are molded to straight sections. External corners are supplied separately.



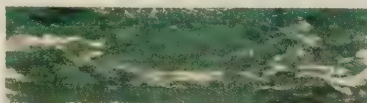
Left internal corner
or end stop



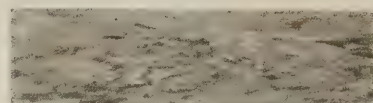
Right internal corner
or end stop



CB-609 Ecruette



CB-652 Jade Green White



CB-656 Silver Gray



CB-665 Ruby Red White



CB-695 Plain Black



*CB-696 Plain Gray



*CB-697 Plain Red



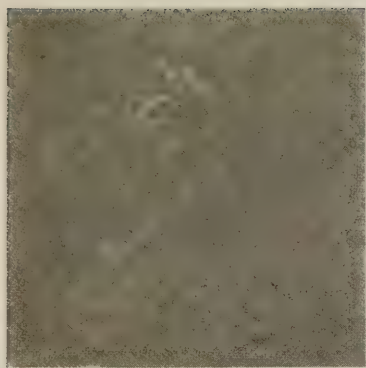
*CB-698 Plain Green



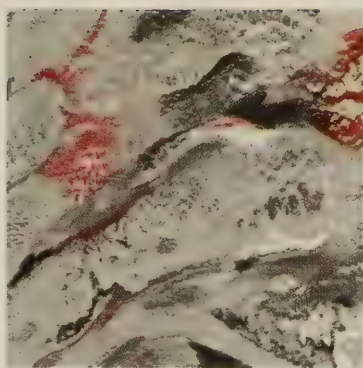
*CB-699 Plain Brown

Armstrong TOP-SET RUBBER COVE BASE

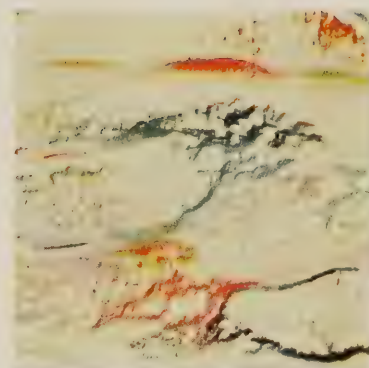
4" and 6" high
*4" high only



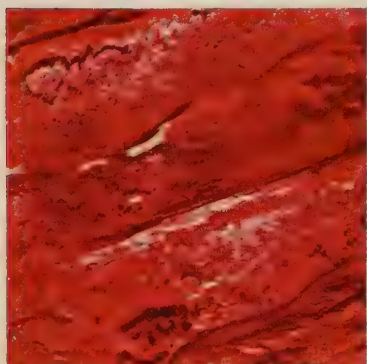
Graphite Gray 169



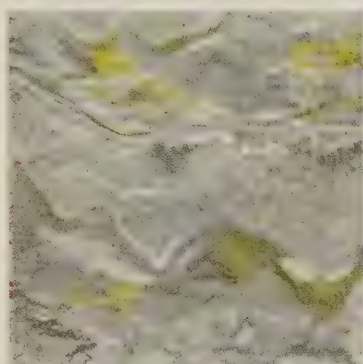
Ruby Gray 170



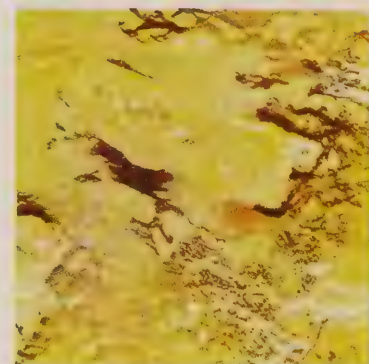
Rainbow 171



Sultan Red 172



Mistglow 173



Sunglow 174

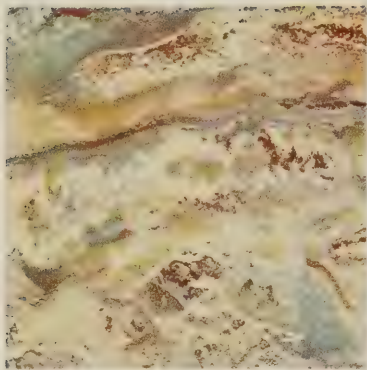


Cocoa Verde 175

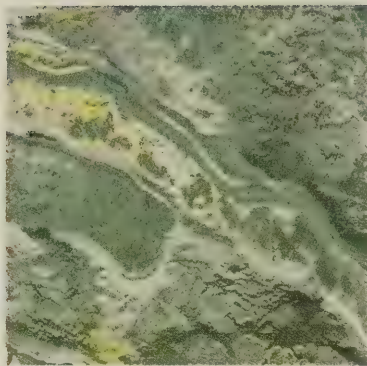
Armstrong Linotile is noted for its exceptional durability and ease of maintenance. It is specially processed for superior resistance to abrasion and indentation, and should not be confused with linoleum cut into blocks. The wearing surface goes all the way through to the back of the material.

Armstrong LINOTILE

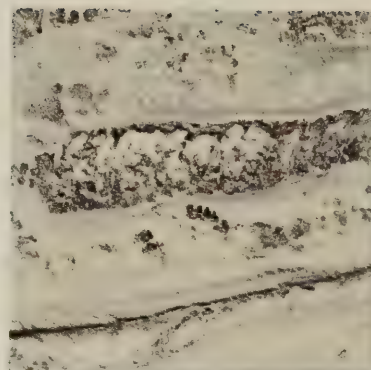
6" x 6", 9" x 9", 12" x 12", 18" x 36"
1/8" gauge only



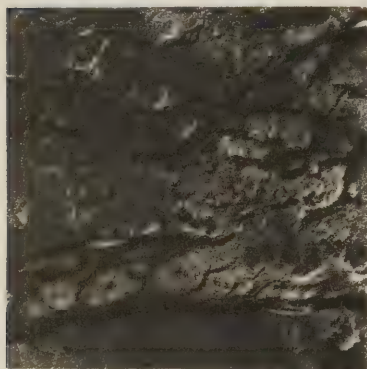
176 Beige Antique



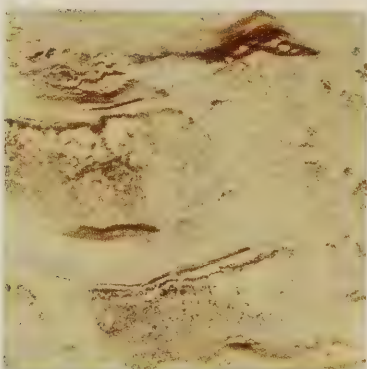
177 Landscape Green



178 Alabaster



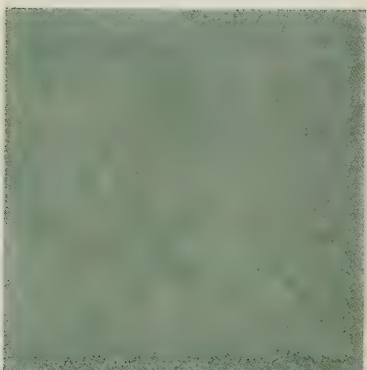
180 Jet Black



183 Travertine



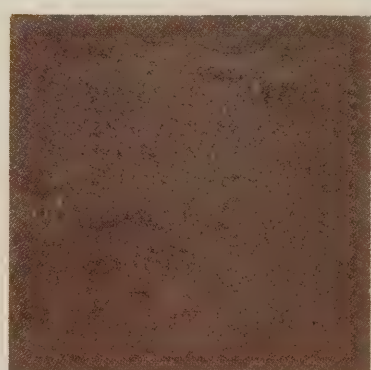
185 Rose Gray



186 Palmetto Green—*designers series*



187 Manila Tan—*designers series*



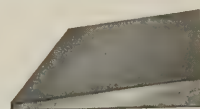
189 Sirocco Taupe—*designers series*



190 Tawny Copper—*designers series*

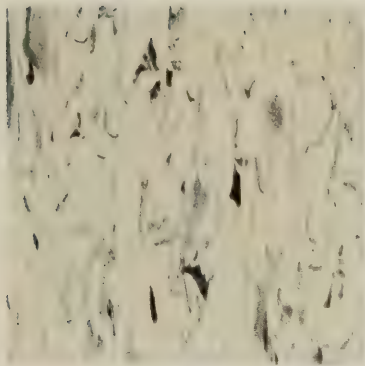


191 Old Ivory—*designers series*

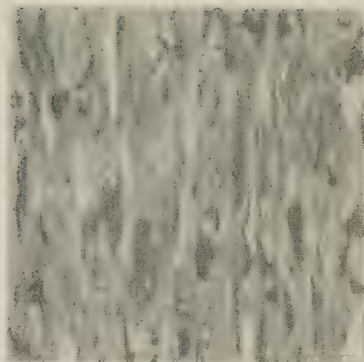


**LINOTILE
BEVELED
EDGING
S-17**

Linotile Beveled Edging is used for finishing exposed edges of all types of resilient floors. It is made in 1/8" gauge only, 1" wide and 36" long, in all Linotile colors. Tapers to 1/32" on the edge.



Carrara White 460



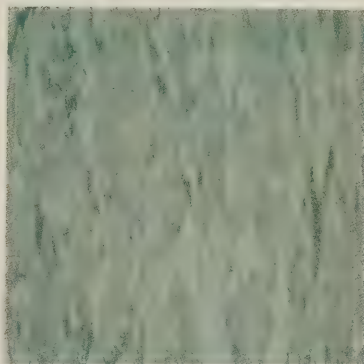
Trieste Gray 461



Imperial Black 462



Copra Taupe 467



Aspen Green 469



Lava Taupe 470



Desert Taupe 471



Mist Gray 472



Laurel Pink 473



Sahara Beige 474

Armstrong Custom Corlon Tile has been especially designed for interiors where an exceptionally rich and luxurious appearance is desired. It is made of the finest vinyl plastic resins and calendered to an almost unmatched sheen. Its distinctive beauty makes an elegant background for all types of luxurious furnishings. It is made in two stylings—Burl grain and Imperial.

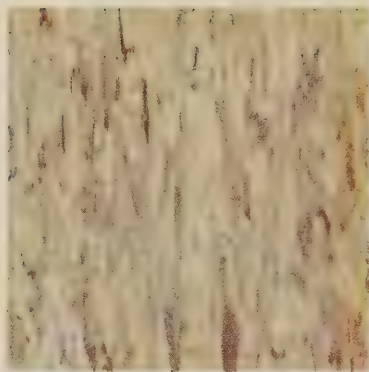
In addition to its elegant appearance, Custom Corlon Tile has many outstanding service qualities. It has exceptional durability and is highly resistant to indentation, alkali, grease, household chemicals and alcohol. It can be installed over suspended, on-grade, and below-grade subfloors.

Armstrong CUSTOM CORLON TILE

6" x 6", 9" x 9", 12" x 12", 18" x 36"
3/32" and 1/8" gauges



475 Empire Yellow



476 Ecreu Beige



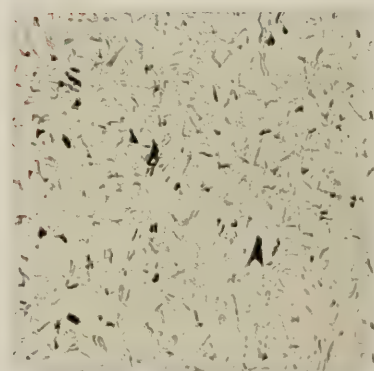
477 Bordeaux Red



The distinct design of the Imperial Series Custom Corlon accents all the wonderful spaciousness of today's interiors. Decoratively this exclusive Armstrong Floor helps unify the new style open-plan areas and gives the floor new importance to the interior design. In this split-level modern home, Imperial Custom Corlon helps blend the various levels into one harmonious unit.

Imperial series in Armstrong Custom Corlon Tile is a beautiful new high style design. It reflects an unusually smart and dignified appearance. The subtle terrazzo design and satin-like finish make it easily adaptable to a wide range of interior decorating schemes in residences, stores, offices, and public buildings. In addition to its dignified appearance, the exclusive satin-matte finish helps minimize floor care.

The background colors of Imperial Custom Corlon blend harmoniously with one another so that striking floor effects can be produced by combining one or more colors in a single floor area. The Imperial series of Armstrong Custom Corlon is highly recommended for any interior where the ultimate in luxury and prestige appearance are desired.



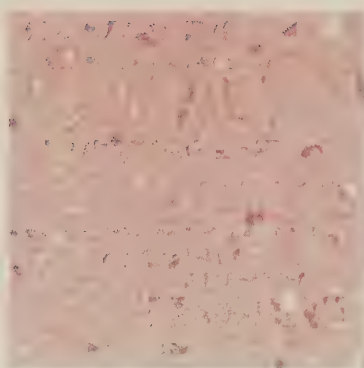
1400 Polar White—imperial series

Armstrong CUSTOM CORLON TILE

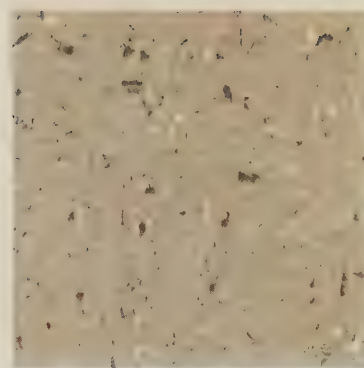
6" x 6", 9" x 9", 12" x 12", 18" x 36"
1/8" gauge



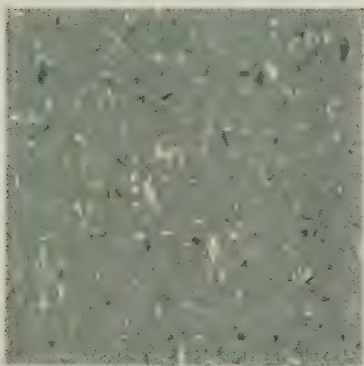
imperial series — Onyx Black 1401



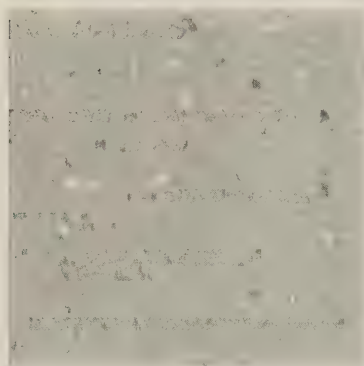
imperial series — Bermuda Pink 1402



imperial series — Shell Beige 1403



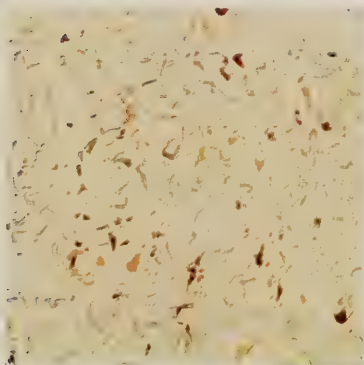
imperial series — Verdure Green 1404



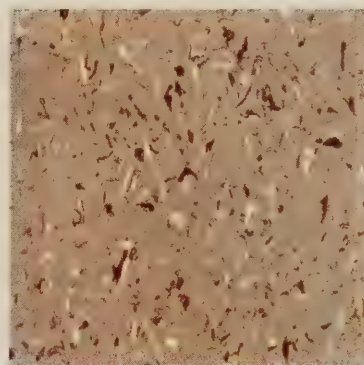
imperial series — Crystal Gray 1405



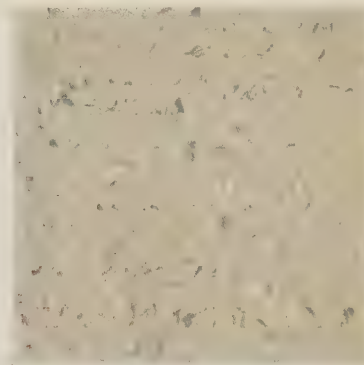
imperial series — Rustic Copper 1406



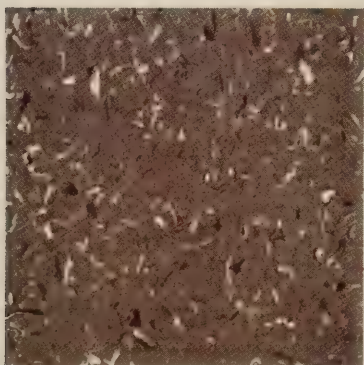
imperial series — Antique Ivory 1407



imperial series — Tawny Sand 1408



imperial series — Turquoise Beige 1409



imperial series — Mole Taupe 1410

Plain White 1460



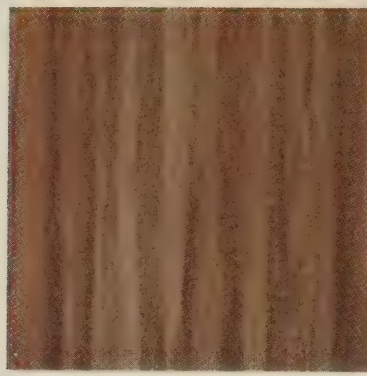
Plain Black 1461

Armstrong CUSTOM CORLON TILE

6" x 6", 9" x 9", 12" x 12", 18" x 36"
1/8" gauge



6400



6401



6402



6403



6404



6405



6406



6407



6408

Armstrong Estate Corlon Tile, sheet Estate Corlon cut into 9" x 9" blocks, presents still more opportunities to create eye-catching plastic floors of this practical material. Ideal for home installation, for use over suspended floors only. Available in the colors shown.



6409



6410

Armstrong ESTATE CORLON TILE

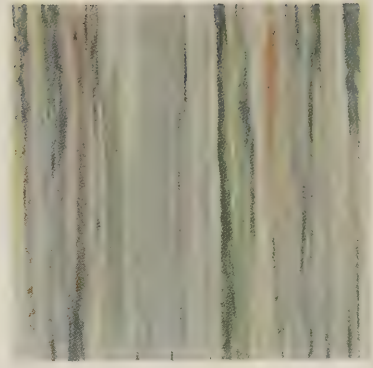
9" x 9"
for suspended floors only



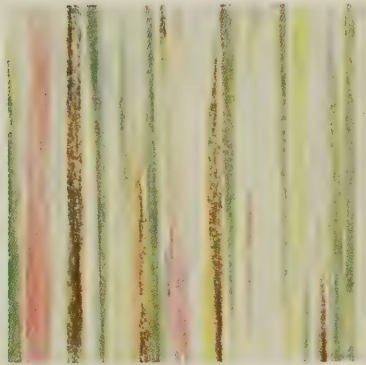
1800 *



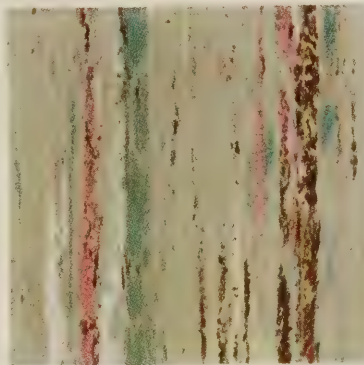
1801 *



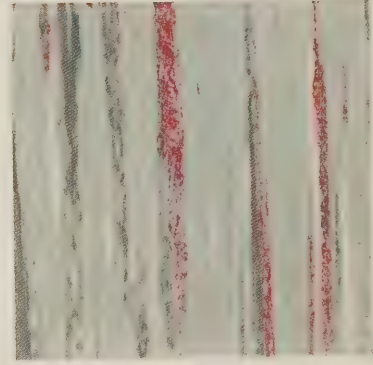
1802



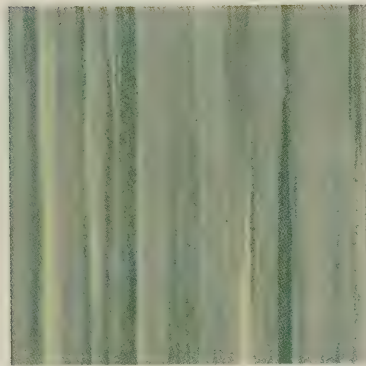
1803



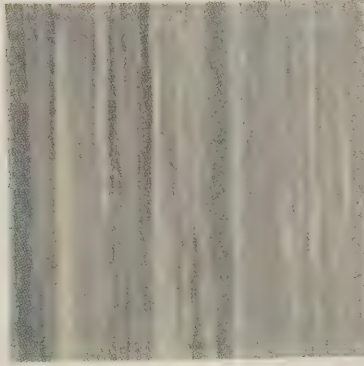
1804



1805



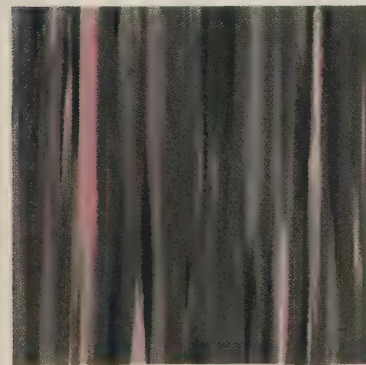
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1807



1810



1811




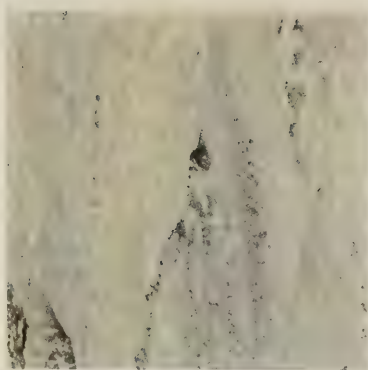
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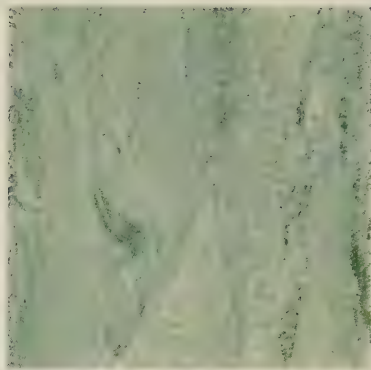
1813

 **Armstrong** DECORAY LINOLEUM TILE

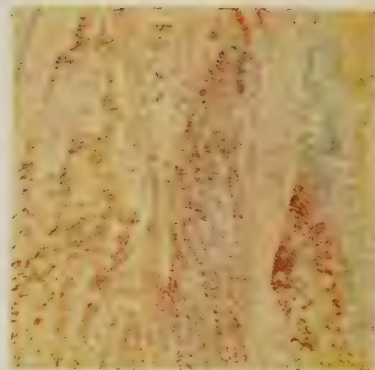
9" x 9" and 6" x 12"
 service gauge
 for suspended floors only



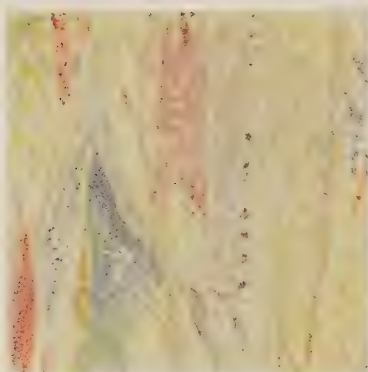
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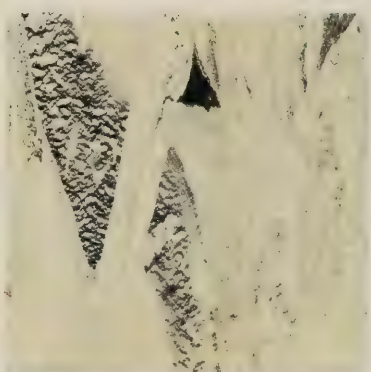
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1502



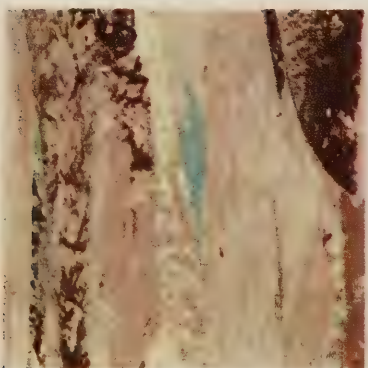
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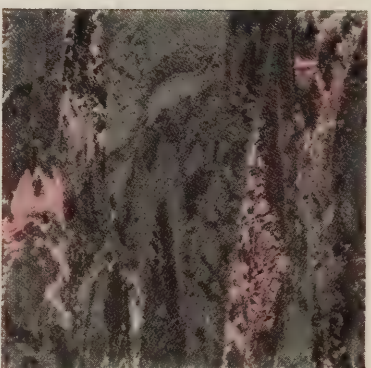
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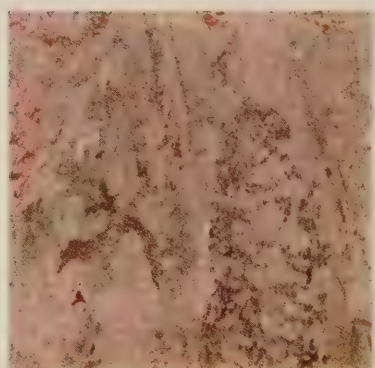
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1516

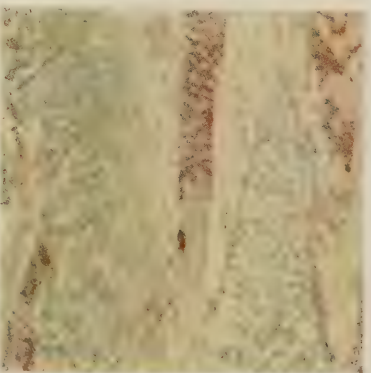


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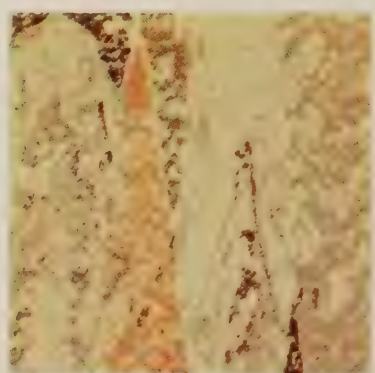


1521

Armstrong Royelle Linoleum Tile in 9" x 9" size offers many opportunities to create highly decorative linoleum flooring effects. While in itself each color makes up into a pleasing floor, still further striking effects can be achieved by combining two or more of the tile colors in one floor design.



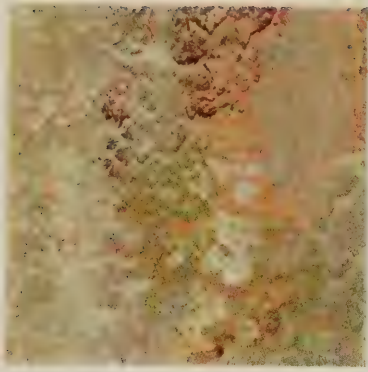
1522



1523

Armstrong ROYELLE LINOLEUM TILE

9" x 9"
standard gauge
for suspended floors only



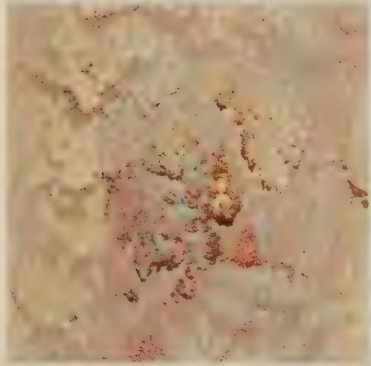
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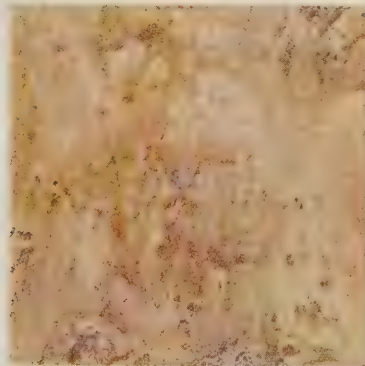
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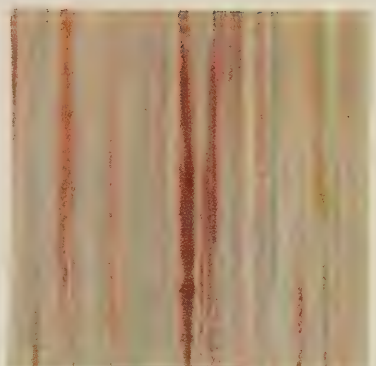
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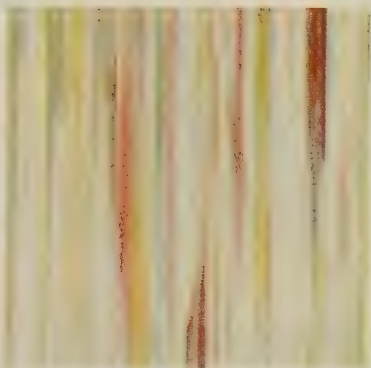
10003



10004



10050



10051



10052



10053



10054

Armstrong Suburban Linoleum Tile offers opportunities to create smart tile floors in areas where the quality of standard gauge linoleum is wanted at low cost. The colorings in the two styles shown are keyed together so that the same color scheme can be carried out in two different floor stylings. For unusual effects one or more colors in either or both styles can be combined in one floor area. It is recommended for suspended floors only. Suburban Linoleum Tile meets F.H.A. specifications for standard gauge linoleum. An ideal flooring material for areas where low cost is important.

9" x 9"
standard gauge
for suspended floors only

Armstrong SUBURBAN LINOLEUM TILE



Beige 75%, Taupe 12.5%, Blue 12.5%



Beige 41.33%, Gray 25%, Black 33.33%



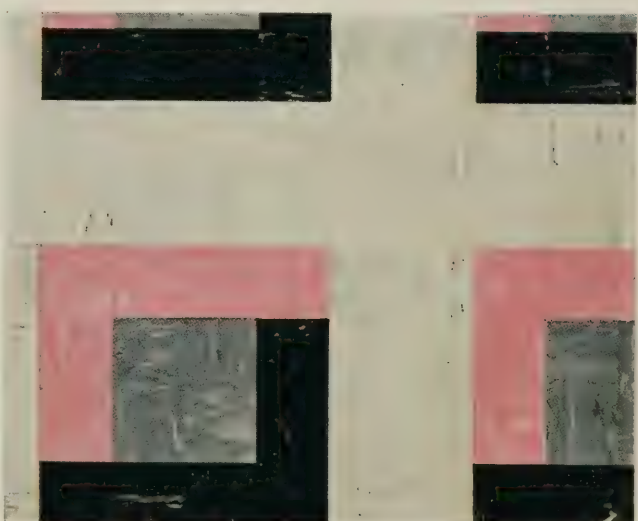
Beige 58.4%, Copper 20.8%, Black 20.8%



Gray 56%, Turquoise Blue 44%

Armstrong Resilient Tiles present many opportunities to create highly decorative floors at moderate cost. Since they are installed block by block, it is possible to design any number of striking floors by combining various colors of a particular flooring. Also, designs can be custom designed to meet both functional and decorative requirements of the interior.

Repeat unit designs in resilient tile floors range from the simple checkerboard effect composed of alternating blocks to the more intricate designs. Illustrated here are a few of the many custom effects which can be worked out in any type of Armstrong Resilient Tile and in colors to suit individual tastes. Color percentages indicated with each design can be varied with room size.



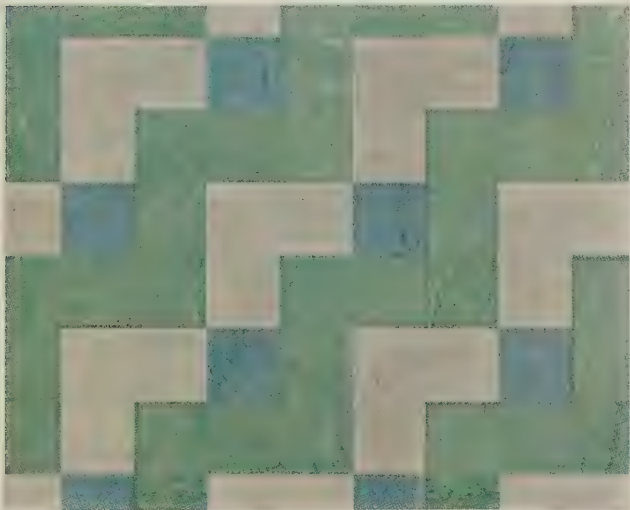
White Black 55.5%, Pink 16.7%, Silver Gray 16.7%, Black White 11.1%



Rainbow 25%, Green 37.5%, Cocoa Verde 37.5%



Tan 50%, Beige Taupe 25%, Copper 25%



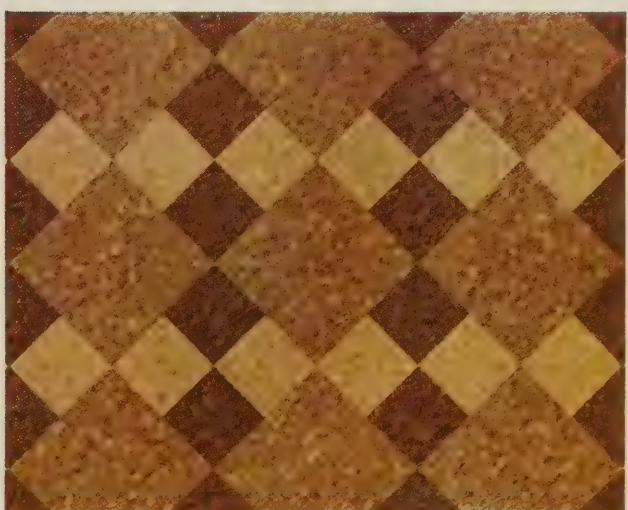
Gray 37.5%, Green 50%, Gray Blue 12.5%



Silver Gray 50%, Yellow 25%, Green 25%



White 25%, Pink 50%, Charcoal 25%



Light Corkstyle 25%, Medium 50%, Dark 25%

Armstrong Wall Coverings are made in three distinct types. Each type is designed to meet a specific service and decorative requirement.

Armstrong De Luxe Corkwall offers something exciting and different in home and commercial decoration. Large particles of cork are welded together with a clear or colored resin to make up a luxurious and striking wall decoration. Ideal for almost any room, Corkwall is particularly recommended for interiors where a rich, dignified appearance is desired.

Armstrong Vinyl Wall Tile is a distinctively new tile-type wall finish. It is a vinyl-asbestos composition that is fire retardant, impervious to moisture, alkali, and most chemicals of the household type. Extremely durable, it is recommended as a commercial and institutional wall finish.

Armstrong Plastic Surfacing is another development of Armstrong research. It is a highly flexible, specially formulated vinyl plastic material in sheet form. It won't crack even when bent around a pencil. It is stain, grease, and wear resistant. It also can be used for counter tops.

Armstrong Corlex is a durable, attractive high-pressure laminate finish for sink tops and counter surfaces. Corlex effectively resists heat, stains and scratches. It requires only minimum maintenance.

The logo features the word "Armstrong" in a bold, green, sans-serif typeface. The initial letter "A" is enclosed within a thin green circular border.

Armstrong

WALL COVERINGS AND COUNTER TOPS

DE LUXE CORKWALL A rich-looking, dignified tile-type wall finish featuring large cork particles arranged in random fashion over the tile area. Offered in natural cork and three specially tinted colorings—Blond, Red Antique, and Green Antique in three sizes *see page* 146

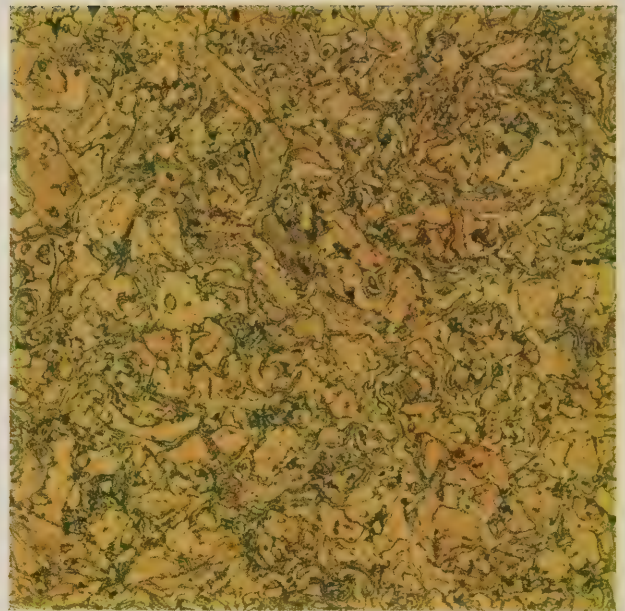
VINYL WALL TILE A new highly decorative and practical vinyl-asbestos wall tile highly recommended especially for commercial and institutional interiors. It is fire retardant and is listed under the label service of the National Board of Fire Underwriters. Offered in a subtle granular textured effect in smart pastel colors. Available in 9" x 9" tile only *see page* 147

PLASTIC SURFACING A flexible, sheet-type vinyl surfacing for both walls and counter tops. Made of vinyl plastic, it resists stains, mold, dampness, alkali, and household chemicals. It is also fire resistant. Offered in a variety of pastel colors in rolls 30" and 42" wide *see pages* 148, 149

CORLEX A rigid high-pressure plastic laminate surfacing for sink and counter tops, tables, and other work surfaces. Available in a variety of colorful patterns, many especially designed to match and harmonize with Armstrong resilient floors *see pages* 150-151



440 Natural



441 Green Antique



442 Red Antique



443 Blond

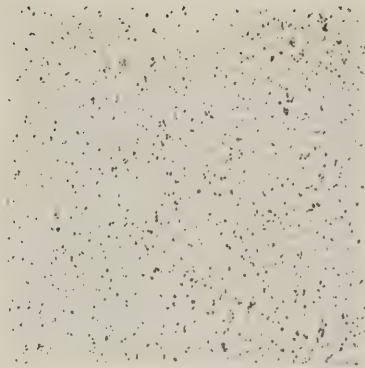
Armstrong De Luxe Corkwall is a specially formulated cork wall finish with many unique and different decorating opportunities. De Luxe Corkwall features large particles of natural cork which have been molded in random fashion to give a decorative effect quite different from regular cork tile. Available in four beautiful colorings—Natural, Blond, Red Antique,

and Green Antique, De Luxe Corkwall can be used as a single wall tone or in a combination of two or more colors. The colorings, produced by tinted binder resins, form rings of color around the cork particles giving the entire area a delicate color tone. Insets of copper, brass, or other metals offer additional decorative treatments. Ideal for custom-built furniture.

Armstrong DE LUXE CORKWALL



Black 8500



White 8501



Yellow 8502



Green 8503



Gray 8504



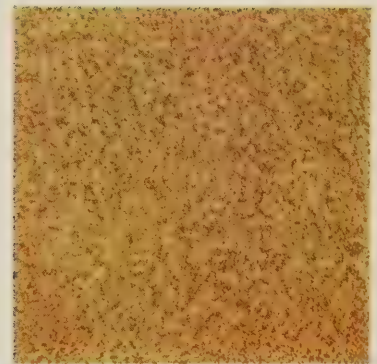
Pink 8505



Beige 8506



Turquoise 8507



Cork 8508

Armstrong Vinyl Wall Tile is a completely new type of wall finish developed especially for commercial and institutional interiors. It is fire retardant and ideally suited for use in schools, hospitals, public buildings, and other areas where a decoratively smart, fire-resisting wall finish is desired. It is made of vinyl plastic and asbestos, two materials noted for their exceptional durability. Vinyl Wall Tile's fire-retardant properties are listed on the Underwriters' Laboratories, Incorporated, label on each carton.

Armstrong Vinyl Wall Tile is offered in the nine colors shown on this page. These colors have been selected to complement one another so that two or more colors can be used effectively in any one or group of related wall areas. Vinyl Wall Tile has a tough plastic surface that does not easily stain, scuff, scratch, or show signs of hard usage. It requires little maintenance, just an occasional light cleaning. Vinyl Wall Tile is made in 9" x 9" tile size only. Its smooth cut edges fit tightly eliminating mortar lines.

Armstrong VINYL WALL TILE



8600 Red



8601 White and Black



8602 Yellow



8603 Green

Armstrong PLASTIC SURFACING



Gray 8604



Pink 8605



Beige 8606



Blue 8607

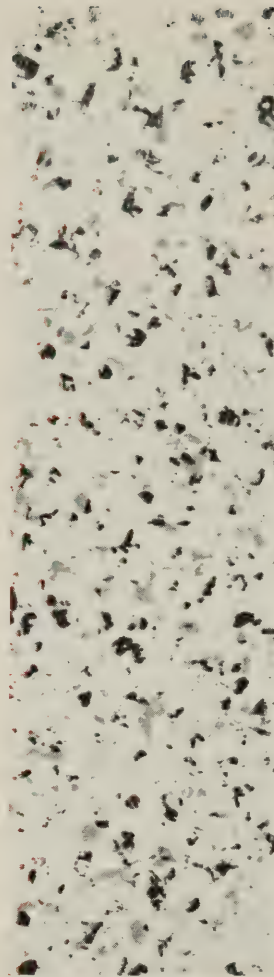
Armstrong PLASTIC SURFACING



7645 White Multicolor
Terrazzo



7642 Red Terrazzo



7641 White-Black
Terrazzo



7643 Pink-Charcoal
Terrazzo

Armstrong Corlex is a high-pressure plastic laminate finish for use over sink and counter tops, shelves, and various furniture surfaces. It is both practical and highly decorative. Corlex has a heat-treated plastic finish that not only resists stains, heat, and scratches, but is also exceptionally easy to clean. The smart designs and colors featured in Armstrong Corlex offer many opportunities to create interiors of outstanding beauty.

Armstrong Corlex is available in twenty-six stylings including nine exclusive Armstrong designs and seventeen standard patterns. The exclusive stylings have been especially designed to co-ordinate or harmonize with Armstrong Floors. Armstrong Corlex is the only plastic laminate surfacing which offers this unique feature. The standard patterns and colors may also be used to complement many Armstrong Floors. All of the Corlex stylings with the exception of the Plain Series are available in both the satin and glossy finish. The Plain colors are made in satin finish only.

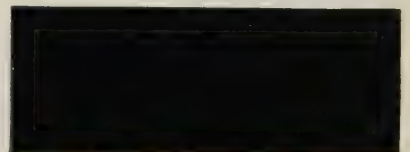
Armstrong Corlex can be installed by either the home or professional mechanic. It is available in sizes ranging from 30" x 60" to 48" x 120".



7402 Plain Red



7405 Plain Green



7410 Plain Black

Armstrong CORLEX



Yellow Terrazzo 7644



Gray Swirl 7602



Pink Swirl 7603



Turquoise Swirl 7601



Beige Swirl 7600



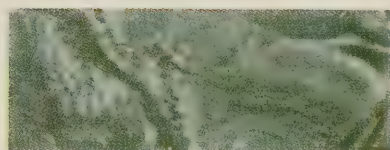
Gray Pearl 7201



Red Pearl 7202



Yellow Pearl 7204



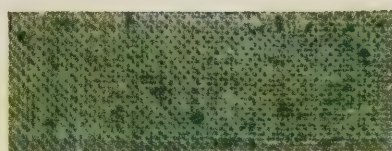
Green Pearl 7205



Blue Pearl 7206



Birch Woodtone 7501



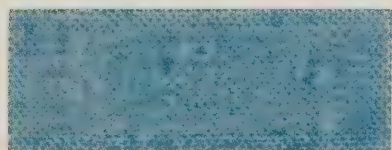
Green Linen 7105



Crystalite Gray Pearl 7301



Frosted Walnut Woodtone 7502



Blue Linen 7106



Red Linen 7102



Yellow Linen 7104



Tan Linen 7119



Gray Linen 7101

Armstrong CORLEX

FOR YOUR CONVENIENCE. Use these post cards
to obtain additional data or samples of
Armstrong Floor, Wall, and Counter-Top materials

☐ Please send me quality samples of the following Armstrong products:

- | | |
|---|---|
| <input type="checkbox"/> Asphalt Tile | <input type="checkbox"/> Custom Vinyl Cork Tile |
| <input type="checkbox"/> Cork Tile | <input type="checkbox"/> Excelon Tile |
| <input type="checkbox"/> Corkwall | <input type="checkbox"/> Linoleum |
| <input type="checkbox"/> Corlex | <input type="checkbox"/> Linotile |
| <input type="checkbox"/> Corlon | <input type="checkbox"/> Rubber Tile |
| <input type="checkbox"/> Custom Corlon Tile | <input type="checkbox"/> Plastic Surfacing |
| | <input type="checkbox"/> Vinyl Wall Tile |

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Address

City State

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|---|---|
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| <input type="checkbox"/> Cork Tile | <input type="checkbox"/> Excelon Tile |
| <input type="checkbox"/> Corkwall | <input type="checkbox"/> Linoleum |
| <input type="checkbox"/> Corlex | <input type="checkbox"/> Linotile |
| <input type="checkbox"/> Corlon | <input type="checkbox"/> Rubber Tile |
| <input type="checkbox"/> Custom Corlon Tile | <input type="checkbox"/> Plastic Surfacing |
| | <input type="checkbox"/> Vinyl Wall Tile |

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| <input type="checkbox"/> Corlon | <input type="checkbox"/> Rubber Tile |
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| <input type="checkbox"/> Cork Tile | <input type="checkbox"/> Excelon Tile |
| <input type="checkbox"/> Corkwall | <input type="checkbox"/> Linoleum |
| <input type="checkbox"/> Corlex | <input type="checkbox"/> Linotile |
| <input type="checkbox"/> Corlon | <input type="checkbox"/> Rubber Tile |
| <input type="checkbox"/> Custom Corlon Tile | <input type="checkbox"/> Plastic Surfacing |
| | <input type="checkbox"/> Vinyl Wall Tile |

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LANCASTER, PENNSYLVANIA

April, 1957

Technical Data - Armstrong Floors, Walls and Counter Tops

This third edition of our Annual Technical Data Book is presented to you with our compliments. The reception of the two previous editions has been most gratifying and assures us that these volumes are considered to be valuable additions to your technical library.

Several additions and changes have been incorporated in Section One of this new edition for 1957. These include details on hydraulic tilt- and lift-slab construction related to the use of resilient floors and walls, information about new backings on linoleum and sheet plastic flooring materials, and revision of adhesives data. Reference charts and tables have been redesigned for easier reading and made more comprehensive.

Section Two presents the Armstrong Line for 1957. We believe you will be especially interested in the new wall and counter-top materials as well as the additions to our flooring materials.

To make certain that you refer to current data and colors, we suggest that you discard the book dated 1956 and replace it with this one. Reprints of the Technical Data in Section One are available for distribution to individual members of your staff, if you would like to do so. Please request as many as you need.

We appreciate your comments which have guided us in the preparation of this material. We also appreciate the consideration you are giving to Armstrong products.

Sincerely yours,

ARMSTRONG CORK COMPANY
Floor Division

A handwritten signature in dark ink, reading "H. Dorn Stewart". The signature is written in a cursive, flowing style.

H. Dorn Stewart, Manager
Contract Marketing



We acknowledge the assistance of the American Institute of Architects in editing the subject matter and form of presentation.

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